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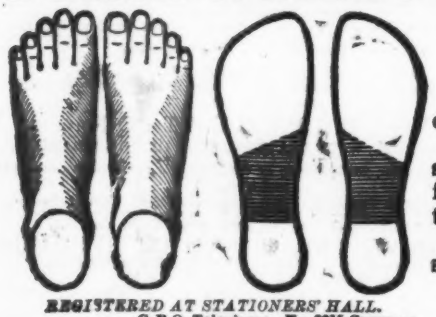

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The Croonian Lectures

ON

TRYPANOSOMES

CAUSING DISEASE IN MAN AND DOMESTIC ANIMALS IN CENTRAL AFRICA.

Delivered before the Royal College of Physicians of London on June 17th, 22nd, 24th, and 29th, 1915,

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LECTURE II.[1]

Delivered on June 22nd.

MR. PRESIDENT AND GENTLEMEN,—In my first lecture an attempt was made to introduce the subject—the Trypanosomes causing Disease in Man and Domestic Animals in Central Africa—by a few introductory remarks on trypanosomes generally and their classification, and also by a short description of their carriers the tsetse flies. To-day I propose to deal with one of the species of trypanosomes more in detail, describing its morphology, its pathogenic action on various animals, its carrier—the tsetse fly, *Glossina morsitans*—and the reservoir of the virus, the wild game.

HISTORY OF THE NAGANA PARASITE.

The first species of Group A, as stated in my last lecture, is *Trypanosoma brucei*, and it will be convenient to begin with it, as it is also first chronologically. That is to say, it was the first pathogenic trypanosome discovered in Central or South Africa, and if you will allow a short autobiographical digression, I will relate the circumstances leading up to the discovery.

Shortly after I arrived in South Africa in 1894, the late Sir Walter Hely-Hutchinson, the then Governor of Natal and High Commissioner of Zululand, asked me to go to the north of Zululand in order to report on an outbreak of disease called "nagana," which had broken out among the native cattle. Travelling at that time was no easy matter, as the railway into Zululand had not been constructed. My wife and I left Pietermaritzburg on Oct. 27th, 1894, and travelling by mule-wagon arrived seven days later in Eshowe, the capital of Zululand. There an ox-wagon was provided, and in it we trekked to Ubombo, a magistracy in the north of Zululand and in the centre of the affected district. This was reached after a month's journey on Nov. 24th, 1894. Here is the small wattle-and-daub hut which was provided as a laboratory and for living in. The verandah, as you see, was used as the laboratory. (Fig. 12.) Shortly afterwards some of the affected cattle were brought in by the natives. As I had just come from the Army Medical College, Netley, where I had been teaching bacteriology for five years, it was natural that a bacteriological examination of the blood and organs of the infected cattle should first be made. This proved to be negative.

FIG. 12.

Our hut, Ubombo, Zululand.

About this time (1894) the study of the blood had become popular, thanks probably in great measure to Ehrlich, and it was the fashion to make elaborate examinations of the red and white blood corpuscles. To this the discovery of the nagana parasite was probably due. It must be remembered that these parasites are, as a rule, very few and far between in the blood of oxen, and also that our staining methods in those days were rather primitive. After some days of this blood examination it began to be remarked that a curiously shaped object different from anything previously found in blood was sometimes seen lying among the blood corpuscles. At first it was thought to be accidental, due to the carbol-fuchsin stain which was being used, but soon it became evident that it might be a blood parasite. It was then thought that if it was it might be motile in the living state. Fresh preparations of blood were made, and after a long search a rapidly moving object was seen lashing about among the red blood corpuscles. At that time I knew nothing about trypanosomes, and at first thought that the wriggling object might possibly be a small filaria. There were few or no allusions to these hæmatozoa in medical literature at that time, but when I returned to Natal and had an opportunity of consulting books, it soon became evident that the rapidly vibrating body was probably a trypanosome.

But there was as yet no proof that the organisms seen had any causal connexion with the disease. They were possibly harmless blood parasites, and they were so scanty in numbers in the blood of the oxen that this might well be so. This led to trying the effect of injecting the blood of nagana cattle into horses and dogs. In these animals the disease is much more acute than in cattle and the blood swarms with the parasites. In this way it began to be evident that these hæmatozoa had a causal connexion with the disease. At that time, however, there was no suspicion that nagana and tsetse-fly

[1] Lecture I. appeared in THE LANCET of June 26th, p. 1323.

disease were one and the same. It was believed by everybody that the tsetse fly killed horses and cattle by injecting a poison into them. Moreover, these cases of nagana were occurring among native cattle many miles away from the "fly belt." The work was being done on the top of the Lebombo, a range of hills some 2000 feet in height, running north and south, about 50 or 60 miles from the coast. Between the hills and the sea there was a low-lying coast plain, some parts of which are infested with tsetse flies. Now I had read in Livingstone and other African travellers and hunters about the tsetse-fly disease, and was curious to know what it was like. Two young oxen and several dogs were therefore sent down into this "Fly Belt" and herded among the fly for a fortnight. At the end of this time they were brought back to the hill, and it was a great surprise to find the same parasite in their blood as that found in the nagana oxen. In this way the fact gradually unfolded itself that nagana and the "fly disease" of the travellers and hunters were identical. This, then, was the manner in which the discovery of the part played by trypanosomes in tsetse-fly disease was made.

I arrived at Ubombo on Nov. 24th, 1894, and was recalled to duty in Natal two months afterwards on Jan. 26th, 1895. This was done by the military authorities in South Africa, who evidently thought they had not been sufficiently consulted in the matter of this investigation in Zululand. It was a year before the Governor could obtain from England the authority of the Secretary of State so as to enable me to return along the long road and take up the broken investigation. I mention this to show that if it had not been for the energy and determination of the Governor of Natal, the Hon. Sir Walter Hely-Hutchinson, this discovery might have been delayed for years. The initiation of the inquiry into the nature of nagana was wholly due to him. In spite of much difficulty and obstruction he persevered in the furtherance of the investigation, and certainly without his active aid nothing at that time would have been accomplished.

The nagana parasite was sent in the living condition, in 1896, to the Royal Society in London, when it was placed in the hands of Messrs. Kanthack, Durham, and Blandford. Their investigation lasted two years and was published in the Proceedings of the Royal Society in 1898. In that year the trypanosome was handed over to Bradford and Plimmer at the Brown Institution, and described and named by them in a paper written in 1899. At this time the nagana parasite found its way into many laboratories and much of the earlier work on trypanosomes was founded upon it.

The Nagana Parasite and Trypanosoma Rhodesiense.

A new and very important page in the history of this hæmatozoon was turned in February, 1910, when Professor J. W. W. Stephens, of the Liverpool School of Tropical Medicine, while examining in class work a stained specimen of rat's blood, containing what was supposed to be *Trypanosoma gambiense*—that is, ordinary sleeping sickness—noticed a marked peculiarity in the morphology. This made him doubt whether the micro-organism was really *Trypanosoma gambiense* or not. These parasites were obtained from a man named Armstrong, under treatment in Liverpool, who had been infected in North-East Rhodesia in September, 1909. Stephens, in collaboration with Fantham, then studied this organism more closely, and came to the conclusion that it was a different species from *Trypanosoma gambiense*, and called it *Trypanosoma rhodesiense*. In this way, then, came about the separation of the Rhodesian form of sleeping sickness from the old Congo form, and you will agree with me that the greatest credit is due to these gentlemen for being the first to bring this far-reaching and important discovery to light.

In 1911 a Commission was sent to Nyasaland by the Colonial Office, under the direction of the Royal Society, to inquire into this and other questions of a like nature. The Commission came to the same conclusion as Stephens and Fantham, that Nyasaland sleeping sickness and Congo sleeping sickness are separate and distinct diseases. We were, however, soon struck by the fact that although the "Fly Country" of Nyasaland extends almost uninterruptedly into the Zululand "Fly Country," no nagana trypanosomes—the common trypanosome of wild game in this part of Africa—could be found. Everywhere, in the wild tsetse flies and in the wild game, it was always *Trypanosoma rhodesiense*, and this in spite of the fact that nagana was reported from Portuguese East Africa, German East Africa, and, in fact, all round about except Nyasaland. It then began to dawn on the mind of the Commission that perhaps *Trypanosoma rhodesiense* was in reality the old nagana parasite masquerading under a new name. As soon as possible a strain of the latter was procured from Zululand for purposes of comparison, and the Commission, after a good deal of work, came to the conclusion that the nagana parasite and *Trypanosoma rhodesiense* are in reality one and the same. They are identical in morphology, in their action on animals, and in their manner of development in the tsetse fly, and until further proof is brought forward that they are separate species the Commission decided to consider them as identical.

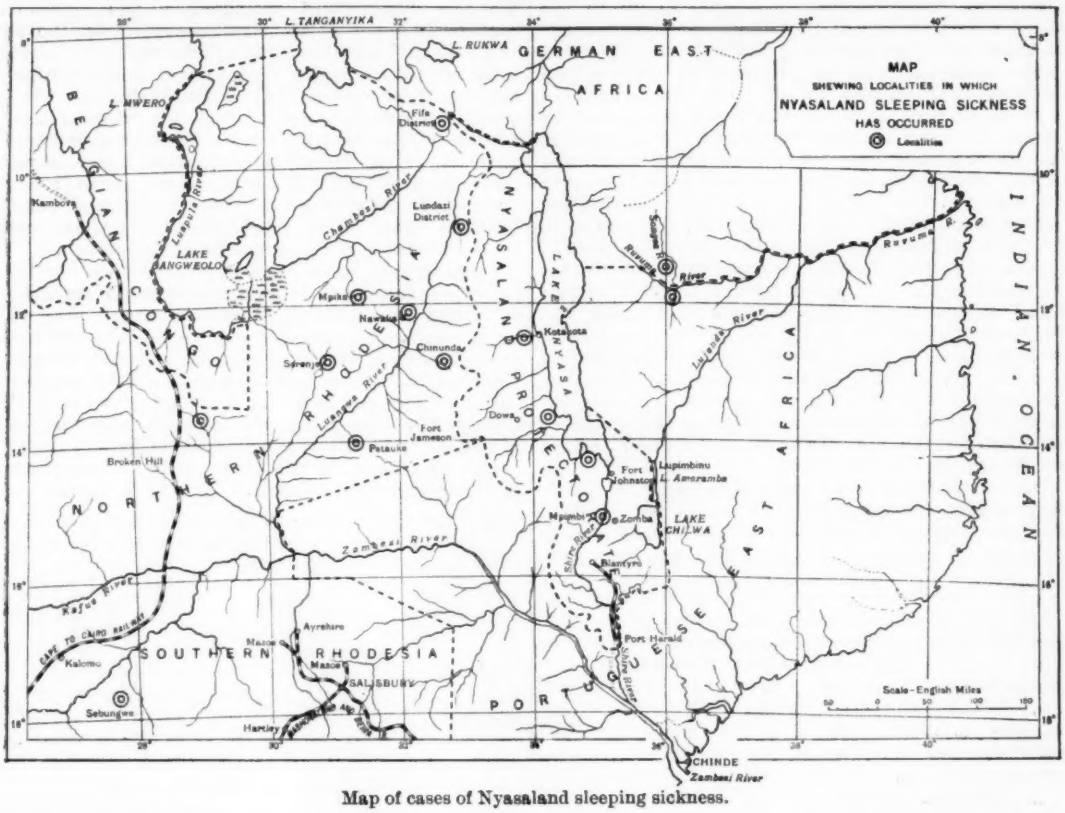
This is a very important matter, because if nagana and *Trypanosoma rhodesiense* are identical then we may expect to find cases of "Nyasaland sleeping sickness" cropping up in all parts of Africa where nagana occurs—in the Sudan, Uganda, British East Africa, North-Eastern Transvaal, and Zululand. If, on the other hand, they are separate species, then cases of this disease would only be expected to occur where *Trypanosoma rhodesiense* is found in addition to nagana. In the past nagana has always been regarded as harmless to man, and certainly no harm seemed to come to those who lived or travelled in the "Fly Country." To this it may be answered that it is only within recent years that microscopical examination of the blood of such cases has been made. Many cases of death occurred among hunters and explorers which were usually put down to malaria, but it is possible some of these may have been due to infection by nagana. This is a question which I will not pursue further; time and further knowledge are wanted before a completely satisfactory answer can be given. But it must be understood that in the following description of *Trypanosoma brucei*, *Trypanosoma rhodesiense* is included.

So much for the history of the nagana parasite. Let us now consider the distribution of this trypanosome in Africa.

GEOGRAPHICAL DISTRIBUTION.

From the map [a map was exhibited representing the distribution of *Trypanosoma brucei* in Africa] it will be seen that *Trypanosoma brucei* and the

FIG. 13.



Map of cases of Nyasaland sleeping sickness.

disease caused by it—nagana—are widely distributed in Africa, extending from the Sudan to Zululand and from the Gambia to Zanzibar; in fact, it is the most widely distributed pathogenic trypanosome in Africa. It may be that in the future strains of nagana in widely separated parts of Africa may be found to differ from each other sufficiently to enable them to be ranked as separate species. As a matter of fact, the nagana of Togoland has lately been named *Trypanosoma togolense* and that of Uganda *Trypanosoma ugandæ*. But until more is known of these varieties I think it better for the sake of simplicity to include them all under one specific term.

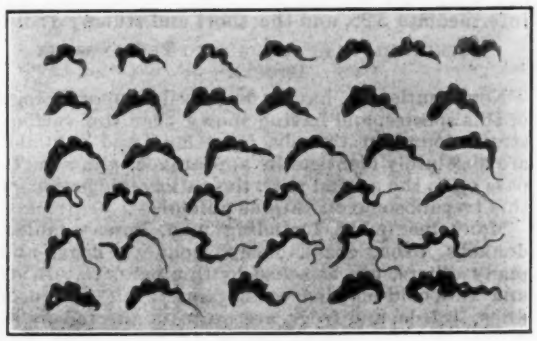
On the next map the districts are shown where up to the present cases of this disease in man have been discovered. (Fig. 13.)

MORPHOLOGY.

I shall now go on to describe the morphology of the nagana parasite. Here is a slide (see Fig. 2, Lecture I.) representing the Zululand strain of *Trypanosoma brucei* which we had sent to us in Nyasaland in 1913 from Pretoria in order to compare it with the Nyasaland human strain—the *Trypanosoma rhodesiense* of Stephens and Fantham.

This trypanosome is dimorphic or polymorphic. This merely means that between the shorter and longer forms a greater diversity of shape is found than in the species belonging to the other groups. The short forms are broad and stumpy in appearance and have no free flagellum, whereas the long are much more slender in appearance, and have a well-marked free flagellum. In the living and unstained preparations this dimorphic character can be readily made out, and the parasites are seen to be actively motile, although they do not move far from one place, they have little or no power of translation. The long and slender are very similar in shape and appearance to *Trypanosoma gambiense*, but the short forms have often broader and blunter ends. (Fig. 14.) In well-stained specimens the

FIG. 14.



Trypanosome causing disease in man in Nyasaland. × about 700.

protoplasm of many of the trypanosomes shows granules, especially in the anterior portion of the cell. The nucleus is oval in the long and slender, and round or oval in the short and stumpy. One peculiarity about the nucleus of this species is that

it is frequently placed far back in the body of the organism. This peculiarity is only found in the short forms, never in the long. The percentage of these so-called posterior nuclear forms is often large, even as high as 50 per cent. The micronucleus is small and round, and situated on an average 2 microns from the posterior extremity in the long and slender forms and 1·4 microns in the short and stumpy. The undulating membrane is well developed and thrown into bold folds and undulations. The flagellum in the long and slender averages 5·8 microns (maximum 11, minimum 2). There is no free flagellum in the short and stumpy forms. [Slides showing various strains of this species were here thrown on the screen.] From these slides it is abundantly evident that the *Trypanosoma brucei* of Zululand, 1894 and 1913, of Nyasaland, and of Uganda are all identical in morphology. This does not, of course, prove that they all belong to the same species. One species of butterfly may mimic the colouring and shape of another. But it is one of the characters upon which we depend for classification.

One useful point in the morphology of these strains has been omitted: I mean the length. Table I. gives the length of various strains of this

TABLE I.—*Showing the Length of Various Strains of* Trypanosoma Brucei.

Source of strain.	Average.	Max.	Min.	Remarks.
	Microns.	Microns.	Microns.	
Human: Nyasaland ...	23·5	38·0	14·0	Various. 6220
,, ,, ...	24·2	38·0	15·0	Rats. 3600
Wild game	22·6	35·0	15·0	,, 2500
Wild *Glossina morsitans*	22·6	35·0	15·0	,, 2500
Zululand, 1913	21·0	35·0	12·0	Various. 1000
,, 1894	22·8	35·0	13·0	,, 200
Uganda, 1909	23·0	34·0	15·0	,, 160

species. From this it will be seen that the measurements of various strains taken from widely separated parts of Africa come out fairly regularly. The human strain is the longest, having an average length of 24·2 microns, whereas the Zululand 1913 strain is the shortest, 21·0 microns. It is rather remarkable that the wild game and the wild *Glossina morsitans* strains should have resulted in exactly the same measurements. The breadth of the long and slender averages 2·76 microns, the intermediate 3·25, and the short and stumpy 3·53.

SUSCEPTIBILITY OF ANIMALS TO TRYPANOSOMA BRUCEI.

Now, gentlemen, having described the morphology of this species, and having shown that the various strains found in Uganda, Nyasaland, and Zululand are absolutely identical in appearance, allow me to pass on to the second part, the pathogenic action of this trypanosome on various animals.

Many mammals, including man, horses, mules, donkeys, oxen, goats, sheep, monkeys, dogs, and many others, are attacked by this parasite. Birds and the cold-blooded vertebrates, such as crocodiles, lizards, and frogs, are quite unaffected by it. A single trypanosome seems to be just as efficacious in setting up infection as a million, and it does not seem to matter whether the kind of trypanosome injected is one of the long and slender forms or one of the short and stumpy. As I mentioned already, passage through one species of animal usually heightens its virulence towards that animal. At the Army Medical College, when the nagana trypanosome begins to kill rats in two or three days, it is usual to pass it a few times through the rabbit, which has the effect of materially lowering its virulence towards the rat and making its passing through the rat less irksome.

In regard to modes of infection, it is extremely easy to infect an animal through the skin; it is usually sufficient to dip a needle in infected blood and merely to scratch the skin of the experimental animals. There is evidence also that infection may take place through the mucous membrane; dogs are sometimes infected in this way through eating infected meat, but it is possible that in these cases there is some scratch or wound of the mouth.

Experiments have been published to show that infection can even take place through unbroken skin, but this must be a rare accident, else why have we escaped infection who have made hundreds of post-mortem examinations on cases of sleeping sickness in man and other animals? In nagana I think we are safe if we lay down as a rule that the infection is conveyed in nature in the vast majority of instances by the bite of the tsetse fly.

But to return to the pathogenic action of this trypanosome on animals. Table II. gives the

TABLE II.—*Giving (a) the Average Duration in Days of the Disease in Various Strains of* Trypanosoma Brucei.

Strain.	Man.	Horse.	Oxen.	Goats and sheep.	Monkeys.	Dogs.	Rabbits.	Guinea-pigs.	Rats.
Human	90	—	134	42	26	34	28	67	30
Wild game	—	—	—	46	38	41	—	—	32
Wild *Glossina morsitans*	—	—	Recovered	54	38	29	47	81	26
Zululand, 1913	—	38	310	77	29	18	33	44	27
(b) The Number of Animals Employed.									
Human	?	—	1	?	20	25	7	15	21
Wild game	—	—	—	5	9	13	—	—	6
Wild *Glossina morsitans*	—	—	2	16	14	25	3	10	19
Zululand, 1913	—	3	1	7	8	17	8	10	23

average duration in days of the disease caused by various strains of this trypanosome, also the number of animals employed. From this it will be seen that this disease runs a fairly rapid course in man, killing him as a rule in three or four months. This, as we shall see, is in marked contrast to the much more chronic course of the Congo sleeping sickness caused by *Trypanosoma gambiense*. In horses, donkeys, and mules nagana runs its course on an average of 38 days. No opportunity of studying the disease in horses occurred in Uganda or Nyasaland, as horses are very seldom seen in these countries. In the ox the disease is chronic and a certain proportion recover. In the other animals it may be said broadly that the disease runs a fairly similar course, and that little or no difference in the virulence is seen between the different strains.

Nagana is, as a rule, a fatal disease, and this is shown in Table III. From this table it will be seen that no recoveries have been reported up to the present in man. In oxen 80 per cent. and 83 per cent. of recoveries are noted. The number of animals employed, however, is so small that these figures are not reliable. With the exception of the oxen, almost all the other animals die. Out of 318 employed in these experiments only 3 recovered.

From its action on animals, then, just as from its morphology, it is apparent that *Trypanosoma brucei*

as it occurs in Zululand differs in no way from the Nyasaland strain called by Stephens and Fantham *Trypanosoma rhodesiense*. It is true that cases in man have not been reported from Zululand, nor from the Sudan, Uganda, or British East Africa, but I expect this hiatus will be filled up within the next

TABLE III.—*Showing (a) the Percentages of Recoveries in Various Animals Infected with* Trypanosoma brucei.

Strain.	Man.	Horse.	Oxen.	Goats and sheep.	Monkeys.	Dogs.	Rabbits.	Guinea-pigs.	Rats.
Human	0	—	80%	0	0	0	0	0	0
Wild game	—	—	—	0	0	—	—	—	0
Wild *Glossina morsitans*	—	—	100%	6%	7%	4%	0	0	0
Zululand, 1913	—	0	83%	0	0	0	0	0	0
(b) The number of animals employed.									
Human	?	—	5	29	20	25	7	15	21
Wild game	—	—	—	5	9	13	—	—	6
Wild *Glossina morsitans*	—	—	2	17	15	26	3	10	19
Zululand, 1913	—	3	8	4	8	17	8	10	23

few years. It is true that Dr. Taute tried to infect himself with *Trypanosoma brucei* got from the wild game in Portuguese East Africa, and is of opinion that this proves that the trypanosome of man and of wild game are different species; but even this does not disturb my belief that the nagana parasite and that causing disease in man in Nyasaland are one and the same. It is, of course, possible that there may exist in Nyasaland a separate species of trypanosome confined to man, and exactly identical in morphology and action on animals with the trypanosome found in wild game and the wild fly, it may be possible, I say, but it is highly improbable.

THE CARRIER OF TRYPANOSOMA BRUCEI.

Now, having described the morphology of *Trypanosoma brucei* and its action on animals, I come to the question as to how this protozoon is conveyed from the sick to the healthy. In Zululand, when it became apparent that nagana and tsetse-fly disease were identical, experiments were made to find out if the fly was the carrier of the disease or merely a concomitant of the low-lying unhealthy country. It was commonly believed by the Zulus that their cattle contracted the disease by drinking out of the same water-holes as the wild game. Healthy horses, therefore, were sent for a few hours into the "Fly Country," muzzled in such a way that they could neither eat nor drink while there. These contracted the disease. On the other hand, bundles of grass and supplies of water brought from the heart of the "Fly Country," and fed to healthy horses on the top of the hill, failed to infect. But tsetse flies brought up in cages from the low country and placed straightway on healthy animals were found to give rise to the disease. By these and other experiments it was proved beyond question that the tsetse flies *Glossina morsitans* and *pallidipes* were carriers of nagana, and one of the first questions which presents itself is, What proportion of the wild tsetse flies found under natural conditions are infected?

THE INFECTIVITY OF WILD TSETSE FLIES (GLOSSINA MORSITANS).

Moreover, when one is in the "Fly Country," and being bitten by tsetse flies, it is interesting to know how many times you may be bitten without encountering an infected fly.

Methods Employed.

The method employed in Nyasaland in studying the infectivity of the wild flies was as follows. Native boys were employed in catching the flies in the low country, and these were brought up the same day to the camp in small cages by a native cyclist. Each cage was fed on three healthy animals; the first day on a monkey, the second day on a dog, and the third day on a goat. To ensure to some extent that each animal was fed on by every fly, the flies were fed daily for nine days, three times on each animal. It is doubtful, however, even with these precautions, if every fly did feed on all three animals. The number of flies in each case averaged about 60, and as each animal was fed on by three different sets of flies, then each monkey, dog, and goat ran the gauntlet of some 180 flies. If any animal became infected with *Trypanosoma brucei*, it was reckoned that there was only one infective fly in the batch. There may, of course, have been two or more. The method was not a very accurate one, but probably near enough for practical purposes.

I now draw your attention to the result as shown in Table IV. As will be seen from this table, there

TABLE IV.—*Showing the Proportion of Tsetse Flies* (Glossina morsitans) *Naturally Infected with* Trypanosoma brucei *in Nyasaland.*

1912.	No. of flies fed.	Monkey.	Dog.	Goat.	1912.	No. of flies fed.	Monkey.	Dog.	Goat.
Jan. 20th ...	296	—		+	May 14th ...	250	—	—	+
,, 24th ...	370	—		—	,, 17th ...	190		+	—
,, 29th ...	280	—		—	,, 24th ...	113		—	—
Feb. 2nd ...	295	—		—	,, 29th ...	120	—	—	—
,, 8th ...	220	—		—	,, 29th ...	230	—	—	—
,, 13th ...	200	—		—	,, 29th ...	320		+	—
,, 16th ...	195		+	+	,, 29th ...	240	—	—	—
,, 21st ...	170		—	—	,, 29th ...	100		—	—
,, 26th ...	170		—	—	,, 31st ...	175	+	+	—
March 2nd ...	140		—	—	June 2nd ...	300		—	—
,, 9th ...	165		—	—	,, 6th ...	210	—	—	—
,, 14th ...	100		—	—	,, 7th ...	230	+	+	+
,, 17th ...	160		—	—	,, 11th ...	160	—	—	—
,, 22nd ...	205		—	+	,, 18th ...	135	—	—	—
April 3rd ...	135		—	—	,, 25th ...	90	+	+	—
,, 10th ...	275	+	+	—	July 3rd ...	95		—	—
,, 15th ...	330	—	—	—	Sept. 25th ...	70	—		
,, 18th ...	200	—	—	—	,, 27th ...	25	+		
,, 18th ...	180	—	—	—	Oct. 29th ...	87	+	+	+
,, 23rd ...	230	—	—	—	Nov. 5th ...	145		—	—
,, 23rd ...	140	—	—	—	,, 11th ...	150	—	—	—
,, 26th ...	100	—	—	+	,, 18th ...	157	—	—	—
,, 27th ...	260	—	—	—	,, 21st ...	95	—	+	+
May 3rd ...	155	+	—	—	,, 25th ...	180	—	+	+
,, 3rd ...	96	—	—	—	Dec. 3rd ...	180	—	—	—
,, 8th ...	330	+	+	—	,, 6th ...	198	+	+	+
,, 9th ...	120	—	—	—	,, 11th ...	156	—	+	+
,, 13th ...	50	—	+	—	,, 16th ...	113	—	—	—

were 56 experiments, and 10,081 tsetse flies (*Glossina morsitans*) were employed. In the 56 experiments *Trypanosoma brucei* was found 20 times (35·7 per cent.). Nine monkeys, 14 dogs, and 11 goats were infected. This gives a proportion of 1 in 500 or 2 flies per 1000 caught in the sleeping sickness area, Nyasaland, infective with nagana. This is only allowing one infective fly to each series of flies fed on the experimental animals, and is therefore the irreducible minimum.

Months and Seasons.

From these experiments it is also seen that these infective flies occur all the year round, and are just as numerous during one season as another.

To conclude, then, in regard to the natural infectivity of *Glossina morsitans* with this species of trypanosome, it may be said that if a man is bitten by a tsetse fly in the sleeping-sickness area of Nyasaland it is 500 to 1 against his taking the disease, since only 1 in every 500 flies is infective with the specific parasite.

THE CYCLE OF DEVELOPMENT OF TRYPANOSOMA BRUCEI IN GLOSSINA MORSITANS.

I ought now to describe the cycle of development of the nagana parasite in the tsetse fly, but as this development is identically the same as that of *Trypanosoma gambiense* in *Glossina palpalis*, and as the cycle was first worked out by us with the latter, it will be better to defer the description of this cyclical development until we come to discuss *Trypanosoma gambiense*. I shall, therefore, now pass on to consider the reservoir.

Whence does the tsetse fly obtain the nagana virus?

THE RESERVOIR.

In Zululand in 1896, when it became certain that nagana or tsetse-fly disease was conveyed to the animals by the fly, the question arose as to where the fly obtained the virus. In the Zululand "Fly Country" there were no natives, since cattle could not live there, and with the Zulus cattle stand for everything. There were therefore no horses, oxen, goats, or dogs suffering from nagana from which the fly could obtain the parasite. But the place being a Government reserve was swarming with wild animals on which it was evident the fly fed. If you shot one of these animals in the "Fly Country" you would often find many tsetses still feeding on the dead body. This led to the examination of the buffalo, koodoo, wildebeeste, and other wild game found in the district. As soon as an animal was killed a quantity of its blood was sent off by a native runner to the top of the hill, where it was injected into a healthy dog. Smears were also made and examined microscopically. In this way it was proved both by animal experimentation and direct microscopical examination that the blood of many of these wild animals contained the same trypanosome as that which gave rise to nagana, and so the mystery of the reservoir was cleared up.

Since 1896 further observations have been made regarding the presence of these parasites in the blood of wild game in different parts of Africa, on the West Coast, in Uganda, and notably in North-Eastern Rhodesia by Kinghorn and Yorke. In Nyasaland we also examined the wild game with some care, and I shall now proceed to describe the results.

TRYPANOSOMES FOUND IN THE BLOOD OF WILD ANIMALS LIVING IN THE SLEEPING-SICKNESS AREA, NYASALAND.

The method of examining the blood of wild game was much the same as that used in Zululand. When an animal was shot a small quantity of its blood was taken in a sterilised bottle containing citrate of potash to prevent coagulation. Smear preparations were made at the same time. As the animals were often shot 30 or 40 miles away from the camp, a motor cycle was used to get the blood up the hill as quickly as possible. When the blood arrived at the laboratory it was at once injected into a goat, a monkey, and a dog. In this way 180 specimens of blood of wild game living in the fly area were examined, and 57 were found to harbour pathogenic trypanosomes (32 per cent.).

This is, however, probably much below the actual percentage. A wild animal is only examined once, and that often under unfavourable conditions. If it were possible to examine the same animal several times it is probable that many more would be found infected. The parasites come and go in the blood; one day they may be present, the next day absent. The big game live in the "Fly Country" among swarms of infected flies and are constantly liable to infection and reinfection.

The following table (Table V.) represents the number of times *Trypanosoma brucei* was found among the 180 wild animals examined, and the species of game which harboured it. From this it will be seen that 14 animals among the 180 harboured the nagana parasite (7·8 per cent.), and that the waterbuck, hartebeeste, reedbuck, and duiker seem to be the most dangerous neighbours to man. 23 per cent. of the waterbuck, 14 per cent. of the hartebeestes, 16 per cent. of the reedbuck, and 14 per cent. of the duiker had *Trypanosoma brucei* in their blood. If, then, my contention that this parasite found in the wild game is the cause of Nyasaland sleeping sickness be proved to be true, then it is abundantly obvious how dangerous these wild animals are to man; and it must be borne in mind that in this Nyasaland fly area *Trypanosoma brucei* is only one of the pathogenic species of trypanosome found in the wild game. Other three species pathogenic to the domestic animals are also found, *Trypanosoma pecorum*, *Trypanosoma simiæ*, and *Trypanosoma capræ*; *Trypanosoma pecorum* in 14·4 per cent., *Trypanosoma simiæ* 1·7 per cent., and *Trypanosoma capræ* in 11·1 per cent. of the wild game examined. Therefore I do not think I was using too strong language when I wrote in a report to the Royal Society: "It is self-evident that these wild animals should not be allowed to live in 'Fly Country' where they constitute a standing danger to the native inhabitants and the domestic animals. It would be as reasonable to allow mad dogs to live and be protected by law in our English towns and villages. Not only should all game laws restricting their destruction in 'Fly Country' be removed, but active measures should be taken for their early and complete blotting out." It must be strictly borne in mind that this only refers to wild animals living in "fly" areas. No pathogenic trypanosomes have up to the present been found by the Commission in the blood of animals living in fly-free areas.

TABLE V.—*This represents the Number of Times* Trypanosoma brucei *was found among the 180 Wild Animals Examined and the Species of Game which Harboured it.*

Species of animal.	Number examined.	Number infected with *T. brucei*.	Species of animal.	Number examined.	Number infected with *T. brucei*.
Eland ...	10	0	Duiker ...	7	1
Sable	5	0	Buffalo ...	9	0
Waterbuck	13	3	Lion	1	0
Koodoo ...	3	0	Hyæna ...	3	0
Bushbuck...	10	0	Elephant ...	2	0
Hartebeeste	35	5	Warthog ...	33	1
Reedbuck...	19	3	Wild cat ...	3	0
Oribi	26	1	Porcupine...	1	0

THE RIGHT-SIDED MURMURS OF MITRAL STENOSIS:

THEIR BEARING ON THE COURSE OF THE DISEASE.

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OTHER cases could be given with similar details, but perhaps these are enough sufficiently to emphasise the points to which I would advert.

CASE 1.—A few days ago I chanced to see a young woman of some 38 years with a badly failing heart. Her history was as follows. She had had rheumatic fever in childhood, but had suffered no serious inconvenience since. She had married in due course, had had two children, and had been told after the last one that she must have no more. But as these two grew up she had a longing for a baby in the house, and therefore another came. It came in such a hurry that no one was prepared for it, and it died at its birth, and this proved such a shock to the mother that she developed some very severe nervous illness with fever of an obscure kind, and very serious heart disturbance gradually emerged. She had become rapidly dropsical with enlargement of the liver and œdema of the feet, and in this state I found her. She had a bluish floridity of cheek and lips with perhaps a very slightly yellow tint between, very characteristic of a contracted mitral. The right side was evidently large, the dullness being ample, and there was a loud systolic murmur all over the præcordia, with a diffused impulse. The murmur was carried well towards the axilla, but there was no definite apex impulse and no thrill of any kind. The murmur was a loud, long, systolic souffle. One might without any hesitation have called it a mitral regurgitant murmur. There was no trace of anything about it that could suggest a contracted mitral, but being alive to this solution of the physical signs, I sat her up and examined the back, and there found, as I had expected to do, that the systolic murmur had entirely disappeared, and that it was replaced at the angle of the scapula and inside it by the irregular and sharp tapping sounds characteristic of mitral constriction. It seemed clear that here was the left ventricle twisted round and turned backwards by the greatly enlarged right ventricle, and thus it came to face backwards beneath the lung.

CASE 2.—A patient whom I have known for some 25 years, and who is still alive doing quiet useful work, was 34 years of age when I first met her in 1888, and she was known to have had mitral stenosis since 1883, when she had seen the late Sir Samuel Wilks and the late Sir Andrew Clark. The heart was very irregular, at one time seeming to tumble about without method, at another giving a startling thump against the chest wall as if it had said its final word, and then, perhaps, becoming more steady and giving a twin rhythm of two short beats accompanied by a short grunting systolic murmur at the apex without thrill. I saw the patient at intervals for many years and she gradually lost all signs of mitral constriction and developed a simple systolic murmur that was mistaken for an *aortic* systolic, but which I had no doubt was due to tricuspid regurgitation. The last time I saw her no one would, I think, have had any suspicion of the original fault in the heart, as its action was quiet and regular and there was no trace of any presystolic murmur, the first sound at the apex being accompanied and followed by a long systolic murmur that travelled into the axilla, while the second sound at the base was accentuated and double. She was complaining of some fullness in the neck, but the veins did not show any distension, and she was beginning to experience a certain amount of anginal pain that I attributed to the stress on the right side, for I have seen the same sort of trouble in similar cases two or three times before. She was still in fair health, and I attributed this in great measure to the fact that for some time she had had unusually profuse catamenial periods; so much so, indeed, that she would become completely blanched. There was at one time a proposal made to deal with this condition, but I advised against it, because I believe, from what I have seen, that a loss of this sort periodically has a really good effect in relieving the pulmonary stress.

CASE 3.—A female aged 58 years. She had had rheumatic fever many years ago, and has had repeated attacks, of late years more frequently, of severe hæmatemesis. She is very blue in the cheeks and lips, and has of late been having bad attacks of breathlessness at night. She is supposed, and no doubt correctly, to have had a bad heart for many years, but after her attacks she has soon danced and golfed and has always seemed to be the better for so doing. She has become worse of late. She has now a loud long systolic murmur all over the præcordia into the axilla, but when you pass to the back it absolutely disappears, and the sounds become remarkably clear, tictac, and small. There is no impulse in the neck, no enlargement of the liver or spleen, no œdema. The cardiograph was applied in her case, but disappointingly, for it spent itself on the registration of fibrillation and paid scant courtesy to my curiosity as to the nature of murmurs—at any rate, it did not help me in arriving at a positive opinion as to the nature of this one. Nevertheless, I am sure, although there exists in the case no proper murmur of mitral stenosis, that this particular lesion exists, that there is a largely dilated right side, that the systolic murmur which anyone may be forgiven for thinking mitral is a tricuspid murmur, and that the left ventricle is twisted round to the back by the enlarged right. Thus may be explained the relief the patient experienced after each attack of hæmatemesis, and also that even dancing seemed to do her good. She was also relieved by a diet of little meat and much water and nothing else. Digitalis never helped her much.

CASE 4.—This patient I saw from time to time through 20 years and she died when about 45 years of age. She had had chorea and rheumatism at the age of 16 years, had married in her twenty-first year, and had had two children when I first saw her in her twenty-third year. She had a bluish floridity of face, a good deal of headache, and the general impression she conveyed to me was one of mitral stenosis, but I did not at first tumble to what has been forced upon my attention later, that the murmur of mitral constriction may be completely masked by the predominance of the secondary disturbances upon the right side. Therefore my first notes tell of a diastolic aortic, and a systolic mitral murmur, and so perhaps they may have been, but I do not think so now. As years went on the case was always providing fresh puzzles. The aortic murmur came and went again and again—a most unusual thing for an aortic diastolic; the murmur called mitral also varied in intensity, and could never be heard behind; at another time the pulmonary second sound was much exaggerated; then the peculiarly sustained character of the pulmonary regurgitant murmur is noted, and that it has no tail; that it even takes a fresh surge in the middle of its roar, suggesting a fluid vein in the pulmonary artery; and at another, remarking upon the loudness of the two murmurs, systolic and diastolic, I add the note how unlikely it would be that anyone observing the case on this date would happen on the diagnosis of mitral stenosis.

CASE 5.—A patient whom I have known for 16 years. She had had rheumatism and chorea many years before, and there were thick lumpy noisy sounds over the right ventricle. The impulse was already out beyond the nipple with a distant purring thrill and a rasping presystolic murmur beyond it. Since those days the right side has gradually enlarged, the presystolic murmur has gone further and further round into the axilla, and a loud long systolic tricuspid murmur has come all over the right side of the heart. The second sound over the pulmonary artery is much exaggerated and the veins of the neck are full. In her general health she has had her ups and downs, but she has with care lived a fairly active life, although of late less so, as there have been set-backs now and again in the way of some œdema of the legs.

CASE 6.—A patient aged 26 years, married, but with no family. Her father had had gout, but she had not had rheumatic fever. For some years she had had bronchitis and blood streaks in her expectoration. There were a well-marked mitral contraction and an accentuated second pulmonary sound. Eighteen months later I noted there was now little evidence of the stenosis in the way of murmurs at the apex, but there was a thick first sound there and a labouring first sound all over the right side. Later on the impulse and presystolic murmur shifted round into the axilla, the right

side being evidently very large. Then a well-marked pulmonary *diastolic* bruit developed, upon which I appended the following note: "It is a peculiar murmur sustained and systolic-like in that respect. There is no thrill. I think it must be a bruit in a dilated pulmonary artery with relative constriction of the pulmonary valve." Again, I find I have made the note that I feel sure that to anyone who had not watched the case the bruit over the apex that I call tricuspid would at first sight be taken for a mitral one. The patient lived, in a good deal of distress most of the time, for some five years.

CASE 7.—A man aged 36 years. He had had bad rheumatism seven years ago, being laid up some 13 weeks. His heart had been troubling him for a year. He was thin and yellow and his liver was large. His heart was thumping away in the præcordia, the impulse extending into the fifth, sixth, and seventh spaces far beyond the nipple, where there was a loud rasping presystolic murmur. At the base there was a loud, long-sustained, almost musical murmur of diastolic time, and a second sound of such extraordinary loudness that there must certainly have been much of pulmonary sound in its make-up. Midway between nipple and ensiform cartilage there was a soft systolic murmur that I took to be tricuspid.

CASE 8.—A patient aged 27 years. She had had rheumatic fever seven years ago. There was a tictac impulse without thrill far out in the axilla, and high up in that space and into the back was a rasping presystolic bruit. There was no systolic murmur in this case, but over the pulmonary artery there was a double second sound, and following it a musical, cooing, diastolic bruit. Two years later I added: It is not conducted over the aortic valves, but it is all over the right side to the left and into the apex of the axilla.

CASE 9.—A patient aged 32 years. Her mother had had rheumatic fever and a brother had died from disease of the heart. She had had chorea and was known to have had a slight mitral murmur for many years which had become much more intense of late. Her complaint was of palpitation and præcordial pain. There was a coarse combination murmur—presystolic, systolic, and diastolic—over a localised area midway between the sternum and the nipple, over the third and fourth ribs and intervening space. Over the impulse in the natural position there was a diastolic murmur rather like an aortic one; it ceased almost abruptly just beyond the vertical nipple line, where it became replaced by the sudden sharp tap of mitral constriction that got more and more loud the further one advanced into the back. The systole was sharp and palpable all over the præcordia, and the second sound was reduplicated. There were no evidences of back pressure, but she had suffered for some months from repeated attacks of copious melæna. I was inclined to think that there was both mitral and tricuspid stenosis in this case, but I lost sight of the patient.

CASE 10.—An unmarried patient aged 34 years. She was troubled with palpitation but had never had rheumatism. She had a very marked presystolic murmur, with diastolic thrill. The impulse was diffused a good deal beyond the nipple, and in the back the murmur was replaced by a peculiarly loud and clear first sound. Over the pulmonary area the diastole was peculiar in that there was a quick succession of sounds, three or four, and lower down this succession was replaced by a diastolic vibration almost musical. I saw this patient at intervals, and the heart sounds did not appear to alter much. The last note entered after ten years is: "She is very flushed. There is now a double, and very very thick second sound at the base, and over the præcordia and at the apex there is a loud sustained diastolic murmur." The catamenial periods were very frequent and I advised that they should be let alone and nothing done to control them. I saw her no more, but she lived till April, 1915, latterly an invalid, although she occupied herself to some extent with light work almost to the last. I was inclined to think that in this case, too, there was probably tricuspid as well as mitral constriction.

First—but perhaps I have already said enough of this—there occurs in the later stages of mitral stenosis a regurgitant murmur over the right ventricle, and, as I believe, at the tricuspid orifice, as a result of hypertrophy and dilatation of the right side. These changes may be so extreme that the right ventricle comes to occupy the place of, and thus to simulate, the left ventricle at the surface, and therefore to get at the left it is necessary to go round to the inferior angle of the scapula. Further, not only is the ventricle dilated but the pulmonary artery also, and the sigmoid valves are more or less incompetent and then there is generated a peculiar diastolic murmur at the orifice of the pulmonary artery that often has something in it of the quality of a venous murmur; it is long and sustained and sometimes musical. It need hardly be said that this murmur is quite distinct from the diastolic murmur that we suppose to be a long or early presystolic bruit. Nevertheless, it must not be forgotten that these murmurs, of the right side as I assert, are by no means now called in question for the first time; indeed, they have been discussed so often that one almost feels reluctant to drag them into the light again, but their real nature in any case is still open to doubt. It must, I think, ever be difficult, sometimes impossible, to be certain between a diastolic murmur dependent upon imperfection of the aortic, and one due to defect in the pulmonary valves; there is the presystolic murmur described by Flint as present in some cases of aortic regurgitation; and there are diastolic hums supposed to be generated in the distended pulmonary veins. Nor can one say that a systolic murmur in the tricuspid area is always and altogether free from doubt; it may even be mitral after all. These points, as I say, have been fully discussed by others, and I am not now concerned to argue such questions again, but with the fact well in view I simply record my own opinion.

Nor is it to be supposed that in this series of cases I am putting forth new wine; many of us are all too familiar with such cases as I have given and with their bearings upon the details of their management, although we might not all agree perhaps as to the exact nature of this or that particular murmur. I am but offering a blend from my own and many another man's cellar, but it is an old wine that a good many apparently have not had the pleasure of tasting. I mean by this that I am often introduced to cases of this kind as being mitral regurgitation. But this is just what they are not. They are cases of *right*-, not of *left*-sided disease as regards their treatment, and this makes all the difference when it comes to dealing with them, as I shall say directly.

Secondly, I may perhaps allude for a moment to the frequency of these murmurs, because this point has come upon me rather unexpectedly. In collating the notes of 84 cases of mitral stenosis I find one or other of these murmurs to be present in 17 of them—the tricuspid murmur alone in 7; the pulmonary artery diastolic alone in 6; and the two were in company in 4 others. But to this I must add that I am sure that I have come across many another that having only been seen once in consultation has gone unrecorded.

Thirdly, it may be said that if the quasi-mitral murmur be tricuspid, as I maintain, the regurgitation would necessarily produce a reflux in the veins and appear as a pulsation in the neck, with other evidences of backward pressure, and I admit that apart from observation I should say so myself; but it is a fact that in some of these cases there may be no such pulsation, for having paid special attention to this point I have often found it absent,

or perhaps it would be better to say inappreciable. The external jugulars may even be found full yet not pulsating. I do not know what the cardiograph might have said. But such absence of pulsation is, I think, explicable. We are familiar with the fact that these cases comparatively seldom, and never until the very latest stages, become generally œdematous, but that they do get enormous and occasionally pulsating livers, and that they spit blood. The stress of the obstruction tells for a long time essentially upon the lungs and liver. The progress of the obstruction is, moreover, very slow in its onset and march, and thus only little by little, and very gradually, do the vessels of the liver and lung become dilated. It is thus that accommodation is engineered, and so gradually do these organs become inured to being backwaters of the circulation, that there seems no limit to their distension until eventually they actually become such enormous reservoirs for the backstemmed blood that the patient may become starved, anæmic, and emaciated, and the heart itself and the general venous system largely relieved of the ill-effect of the pressure. A similar process is seen sometimes in the spleen when there is cirrhosis of the liver. Years ago a young woman was brought to me with an enormous spleen. It was thought to be some tumour of another kind and it was proposed to remove it, but it was certainly splenic, and at that day we had not arrived at the power of removing the spleen without removing the patient also. There was no evidence of cirrhosis, but there was a history of a bad miscarriage followed by jaundice some few months before. A few weeks after I saw her she suddenly had a large hæmorrhage and the splenic enlargement disappeared. I saw her after a few weeks and could find nothing, but after a little while the spleen slowly swelled again, and she had another hæmatemesis that killed her offhand. The liver was cirrhosed in a somewhat peculiar way, which I thought might have originated in plugging of the portal vein.

It seems reasonable to suppose that the chronic distension of the right auricle and ventricle thickens the walls of the auricle and of the sinuses opening into it and thus interferes with the backward vibrations of the blood current and so limits the pulsations in the neck. The muscular walls, too, have undergone hypertrophy, and so may pass into a state of spasm and play a part in preventing backflow, as Dr. D. W. Samways has, I think, suggested for the left auricle, and cysts may certainly be so tense that they will not fluctuate.

The existence of such reservoirs bears thus upon the prognosis. The outlook in mitral stenosis has often been discussed, and it is usually held to come next in gravity to aortic regurgitation, yet it would seem that the majority live for many years. We must all know of cases that have lived and died without revealing evidence of heart disease of any kind. Many years ago I showed from the post-mortem records of Guy's Hospital how frequent was the co-existence of mitral stenosis with the granular kidney, and that it is by no means uncommon to find this association in aged people when the condition of the heart had never been suspected. Now, whatever be the relation between the two conditions, it is quite certain that the mitral constriction is one that could only mature very gradually; the rigid thickened valve we recognise as mitral stenosis could own no recent development, therefore these old people had lived for many years, and died, without the production of symptoms. I have in mind even now an old friend of over threescore years and ten who has never had any symptoms and who *qua* heart has no idea of anything the matter.

My own observation would lead me to think that the outlook in mitral stenosis is in most cases good for a number of years. Of the cases I have given one patient is alive at 61, and has been known to have her disease 32 years; another, who died at 60, had had it many years; another, who died at 45, had had it 20 years to my knowledge; another, still alive, has had it 16 years; and another has died recently after 20 years. And, mind, all these were what might certainly be said to be rather extreme cases. But this is, I think, no more than one might have expected. The process of contraction of the valve ring is considerably opposed, and therefore kept at bay by the continual distending force of the circulating blood current. By the time this force ceases to be appreciably effective the establishment of huge internal reservoirs in lung and liver is well developed, and by such means the blood stream has been reduced to manageable proportions and can be dealt with fairly satisfactorily.

The foregoing remarks lead naturally up to a few words upon the treatment and management of these cases. This is what may be called an old-fashioned paper. It deals with "mitral stenosis," but I half suspect that there are some to-day who hardly know what I mean, and I fancy myself being asked to express myself in terms of muscular action. Certain it is that many of such cases as I have dealt with here are now to be found in the history of auricular flutter and fibrillation. And, unless I am greatly mistaken, according to present pathology their treatment is recommended to be by the free administration of digitalis. I cannot think that this accords with my experience. Long ago I formed the opinion from no small opportunities for observation that digitalis is a drug for *left* hearts, and that it is far less reliable in its action upon the right heart. Whenever the patient is suffering by default of the left ventricle, even where the case may be especially due to an overtaxed right, digitalis may be expected to do good, so that perhaps one cannot rule it out until one has given it a trial. Still, on the whole, I am entirely in accord with the late Dr. Arthur E. Sansom, who said, as the result of his experience, that digitalis often does harm in mitral stenosis and that convallaria was, as a rule, more useful. To that I should like to add that I think opium is often better still, by steadying the heart's action, and perhaps better than all in bad cases come leeches or venesection. There are other important points also pointing in the same direction of lessening the volume of the circulation.

These cases largely occurring as they do in women, they are, I believe, liable to begin to go down hill more rapidly when the climacteric is reached, and in one or two I have pointedly alluded to the fact that profuse losses at the "period" seemed to relieve them and do good. Other losses have seemed to act in a similar manner. I remember how a medical friend used to have a rather free hæmoptysis once or twice a year. He would get into a great fright, but the bleeding certainly did him good, and when after some years they unfortunately ceased he very quickly succumbed. So I would say, Do nothing to arrest an occasional blood loss in any case; and I am very much inclined to think that venesection at spring and fall, as in olden times, might be a good practice for this class of case.

Diet also needs consideration. Many of these people find out for themselves, as do asthmatics, that they are only comfortable when their meals are of the smallest. A small piece of fresh and tender meat, with a piece of toast and a little junket or custard, are better than much vegetable and stodgy pudding. Further, a great deal of good may often be done by limiting the food entirely for a week or ten days to buttermilk or whey, or even water. Yes! Water is a good food, for it depletes the solids of the body that are so often far too abundantly in store. Some have recommended that these people should live dry so as to reduce their circulation in that way, but I cannot say that I have found that plan nearly so successful. It seems to me far better to allow plenty of *fluid*, provided that it be little else than water.

Lastly, a patient suffering from mitral stenosis should never be laid up if it can be avoided. When once they take to the recumbent posture they are probably in for a slow decline of a very distressing kind. Moderate exercise favours the circulation of the stagnant pools in lung and liver, the aspiratory action of the heart, too, as some have said; and for similar reasons, no doubt, systematic exercises are often very advantageous.

Portland-place, W.

A CASE OF
CONGENITAL HEMIHYPERTROPHY.

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THE patient, aged 9 months, is the only child of healthy parents. There is no history of congenital deformity in any other member of the parents' families. The condition present in the child was first noticed some months after birth, but there appears no reason to suppose that it was not congenital. Beyond a small umbilical hernia the child presents no signs of disease or deformity other than that about to be described. His mental condition is normal; in fact, he is remarkably bright, active, and intelligent for a child of his age. His skin is normal. There are no nævi or subcutaneous lipomata. The growth of hair and nails is the same on both sides; he has cut two lower median incisor teeth, which appear to be equally developed, and there is no difference in the temperature of the two sides of the body.

The whole of the right side is larger than the left. The disparity is most noticeable in the lower extremities and face. The right ear is larger than the left, the right palpebral fissure is more widely open, and the right side of the tongue and right side of the lower jaw are distinctly larger than the opposite sides. The face has a curiously twisted look, as if the median line, instead of being straight, were the arc of a large circle, the centre of which would fall a yard or two to the left of the head.

The parts are well developed, the muscles seem firm, there is no subcutaneous œdema on the larger side. The child, however, seems to use his left hand more readily than the right.

The general appearance of the child and the enlargement of some of the bones are shown in the accompanying photographs (Figs. 1 and 2) and skiagram (Fig. 3), for which I have to thank Mr. James Taylor, skiagraphist to the Bristol Royal Infirmary.

Hypertrophy or Atrophy?

In replying to a discussion on a case shown by himself to the Society for the Study of Disease in Children in 1905, the late Dr. George Carpenter refused to commit himself to an opinion as to whether one side of the body was hypertrophied or the other side atrophied. Cases of hemiatrophy have been described, but that the majority are hemihypertrophies seems probable from the following considerations: 1. The distribution of the enlargement may vary from a few digits to the whole of one side. It would be absurd to regard two toes as normal and the rest of the body as atrophied. 2. Cases of enlargement of the opposite limbs are similarly difficult to regard as an atrophic condition of the rest of the body. 3. In several cases, for instance, the one recently described by Dietlein, the smaller side was more functionally useful than the larger. 4. The few post-mortem examinations do not give any support to the view that the smaller side is atrophic.

Historical.

Although the older writers were zealous collectors of the monstrous and anomalous, cases of hemihypertrophy seem to have escaped their notice. In the curious illustrations of monsters which are found in Schedel's Nuremberg Chronicle (1493) they do not appear, as far as my memory goes; in Gould and Pyle's book no mention is made of instances reported by classical and mediæval writers. The earliest records seem to date from the beginning of the nineteenth century; Wagner's was published in 1839, and in England Adams, in THE LANCET of 1858, reported a case of hypertrophy of the right lower extremity in a boy aged 19, the whole limb being the seat of an immense nævus. A treatise on the subject was published in 1869 in which 12 cases were cited; and in 1897 Leblanc, in a thesis for the Doctorate of Medicine in Paris, collected short notes of 78 cases from the literature summarising their features and suggesting a theory as to their causation. Since then a number of other reports have appeared in the periodical literature of all countries, some references to which will be found at the end of this paper.

Clinical Groups.

Various writers have grouped cases of hypertrophy into several fairly well-marked divisions, but it is probable that some of the earlier instances would have to be excluded from the category of simple hypertrophy if tested by the light of more modern observation. In the first place, acromegaly may have been confounded with simple hypertrophy, and it is fairly clear that trophœdema was not distinguished by the earlier writers as a distinct entity.

Measurements of Patient shown in Figs. 1, 2, and 3.

	Right.	Left.
	Inches.	Inches.
Lower extremity:		
Anterior superior iliac spine to internal malleolus..	12½	11
Maximum circumference of thigh	9½	8
,, ,, calf	7½	5½
Length of foot	4½	4
Upper extremity:		
Tip of the coracoid to styloid process of radius ...	8½	8
Maximum circumference of arm	5½	4½
Thorax:		
Maximum circumference from mid sternum to spine	9	8
Head:		
Anterior fontanelle to mastoid	6½	6
,, ,, point of chin	8½	7½

FIG. 1.

Showing the disparity in size of the two sides of the face and head.

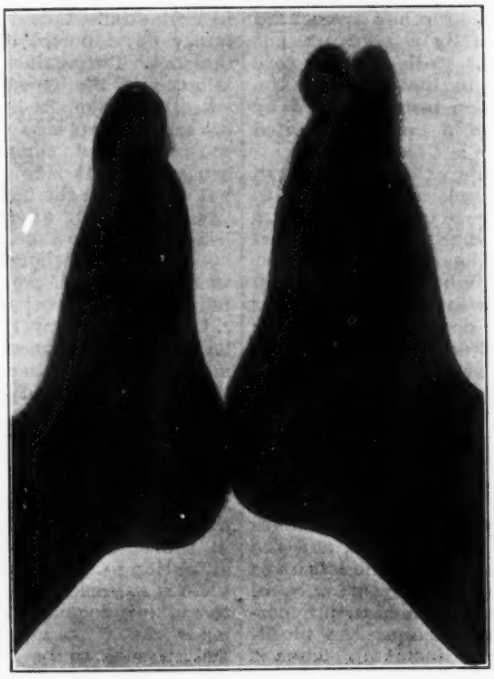
FIG. 2.

Showing the relative sizes of the lower extremities.

Adams (1894) distinguishes two groups: (1) The less common *true* hypertrophies, always congenital and unilateral, not progressive or associated with other deformities; and (2) the commoner *false* hypertrophies not always congenital, occasionally bilateral, associated with syndactylism, lipomatosis, and in many cases irregularly progressive. Greig (1898) further notes that cases with facial hypertrophy often show ocular defects (strabismus), and in 20 per cent. are mentally deficient, while those in which the head is not involved are mentally sound, but often exhibit nævi, clubbed feet, or webbed fingers. Froelich (1908) recognises three classes — namely, (1) simple hypertrophy involving all tissues, (2) cases resembling generalised œdema or elephantiasis, and (3) those in which the increase in size is due to a congenital tumour, such as an angioma.

It must be admitted that these classifications present certain difficulties, and that it is not always easy to place any given case in one or other groups. Thus, in Berend's case there was complete lateral hemihypertrophy with partial syndactyly, and as mental deficiency is only found in a small number of Greig's first class, the majority of these might belong to the first or second. Froelich's classes are larger and better defined. His second class corresponds to the cases described by Moncorvo, which are apparently congenital instances of the trophœdema of Miege. One of these cases was shown to the Society for the Study of Disease in Children at the Bristol meeting in 1904 by Dr. Bertram Rogers and the writer. Froelich's third class is associated with his first, as the two conditions may co-exist. In this connexion Hutchison's case is of interest, for here the enlargement of the left side of the trunk and the left arm and leg was mainly due to a diffuse subcutaneous lipomatosis and was associated with nævi and overgrowth of the kidney, thymus, and suprarenal on the same side.

FIG. 3.



Right and left feet from the inner aspect; the hypertrophy mainly affects the soft parts.

The terms "false" and "true" as applied to hypertrophied parts are apparently used as meaning hypertrophy involving one tissue only or all the tissues in varying degrees. This distinction is, however, difficult to apply, as a large overgrowth of fatty subcutaneous tissue may mask some increase in size of the deeper structures. Thus, in two cases recently reported one (reported by Batty Shaw) was regarded as a false hypertrophy, and if the deeper structures were involved it can only have been to a very inconsiderable extent. The other case (Archibald) is

classified as "elephantiasis," but appears to be a general hypertrophy, the photograph showing a marked lateral curvature no doubt secondary to the increased length of the right lower limb. The distinction I should therefore regard as a relative one, as it is uncertain whether one tissue is ever solely involved. In one apparent case there was also hypertrophy of certain viscera, and enlargement of the vessels and muscle fibres (which may be present in others) is impossible to demonstrate clinically.

It seems, therefore, that the following groups may be recognised: (1) Congenital elephantiasis or trophœdema; (2) simple congenital hypertrophy of one or more limbs or of one side of the body ("true" or "false"); (3) intermediate cases, in which there is some general hypertrophy of a segment of the body and also a congenital tumour of a special tissue; and (4) congenital tumours involving a limb.

The case described in this paper falls into the second group, the main characteristics of which may be summarised as follows: The condition is congenital, and may involve a large or small area of the body, from a few digits to the whole of one side. The hypertrophy involves all tissues, but is more marked in the soft structures than in the bones, and thus usually affects the girth more than the length of the limbs. In one remarkable case reported by Reissmann the right side of the body and the left side of the head were involved, while in Ballance's case there was hemihypertrophy of the left side of the face with enlargement of the second and third toes of the left foot, and the third and fourth of the right. The boy was also said to be "rather simple." In Friedrich's case the opposite arm and leg were involved. The appendages of the skin, nails and hair, may or may not be involved; and in some instances the temperature on the affected side is higher. The right side is said to be more frequently enlarged than the left and the lower extremity than the upper. Males are more frequently affected than females, and there is very seldom any family history of other congenital deformities, though occasionally a neurosis has existed in the parents. Thus, in Hornstein's case the mother was insane, and in that of Adams the father was dissolute. In one instance cited by Leblanc several members of a family exhibited congenital hypertrophy of the left hand.

Nævi, often of considerable extent, have been noted in many instances, and may be held to justify the inclusion of the case in the third group cited above. They are not limited to the affected portion of the body, though usually found upon it. In some instances there is slight mydriasis and in others the areas involved sweat profusely. Other congenital deformities are occasionally present; secondary deformities may develop due to the unequal length of the lower extremities.

Pathogeny.

It must be remembered that slight degrees of asymmetry are not uncommon. Anderson, quoting various authors, noted that asymmetry generally is more common in the male sex, both in man and other animals. The thickness of the cranial bones may vary perceptibly on the two sides, and the right arm is said to be longer than the left up to the age of 13 years. Then, again, hypertrophy of portions of the body may be combined with hypertrophy of one special tissue, such as the blood-vessels (nævi) or fatty tissue (lipomata). Thus it seems necessary that any explanation of simple hypertrophy must (1) be consonant with that for asymmetry in general; and (2) involve the explanation of the occurrence of tissue hypertrophy of a localised character (congenital tumours).

The actual facts derived from anatomical examinations are scanty and not particularly illuminating. In McGregor's case (a boy who died from general tuberculosis) there was a peculiar hardening and enlargement of the optic commissure and right optic thalamus, but no microscopical examination was made. In two of Leblanc's collected cases the brain was macroscopically normal.

In Hornstein's case, which is very fully reported, the post-mortem examination showed general hyperplasia of bone, fatty and connective tissues, thickening of the nerve sheaths, enlargement of the arteries and thickening of their walls, and increase in the size of the muscle fibres. The spinal cord and ganglia, examined microscopically, were normal. Macroscopically the brain was normal.

In Hutchison's case the brain was normal in appearance and there were no changes in the pituitary or pineal glands. The condition of the other parts has been noted above.

The amount of theoretical explanation is, as usual, inversely proportional to the number of pathological facts. The so-called lymphatic theory may be dismissed as probably only applying to cases of trophœdema; Trelat and Monod believed that the hypertrophy was due to vaso-motor paresis and consequent hypernutrition dependent on a disturbance of the sympathetic system; although, as has been pointed out, section of the sympathetic does not give rise to skeletal hypertrophy. Barwell suggested that there was arrested development of the middle coat of the arteries and consequently dilatation and increased blood-supply. There appears to be little anatomical evidence for this view. Lastly, some lesion of the central nervous system has been assumed. Grieg supposed an intra-uterine meningitis of the brain or cord, but it is difficult in the case of the cord to see how it could be unilateral. Leblanc attributes the condition to faulty development of the primitive segments of the cord. But against this is the fact that the distribution of the hypertrophy is not segmental in all cases, as he supposed. Reissmann assumed that in his case the left side of the brain was larger than the right, and thus through trophic influence caused the left side of the body to hypertrophy; but apart from the fact that cases of crossed hypertrophy are very exceptional, in Lewin's case the left side of the face, left arm and abdomen were hypertrophied, whereas the right leg was larger than the left, a crossing difficult to explain on Reissmann's supposition.

If, encouraged by the example of others, I may be permitted to speculate, I would suggest that the most satisfactory theory would be one which would link up general and local hypertrophies by means of a common cause. Certain cases of gigantism have been ascribed to excessive action of the secretion of the anterior portion of the pituitary body, which, like the thyroid, is thought to produce varying effects according to the period of life of the subject. This presupposes either an alteration in the character of the internal secretion, or an alteration in the tissues of the body, or both. Too little is at present known of the internal secretions to enable a dogmatic assertion on this point to be made; but if we may assume an alteration in the body tissues to be the more probable change, it will follow that in the growing organism some

property must be generally diffused over all the tissues which in adult life is restricted to a few, so that gigantism occurs in the first case and hypertrophy of certain bones and other structures in the second. Whether this peculiar property which allows growth to be stimulated by pituitary secretion resides in the overgrown structures themselves or in the nervous elements controlling their growth does not affect the hypothesis here outlined. It would be in accordance with the chemical tendencies of the day to describe this character of certain tissues which renders them liable to be affected by hyperpituitarism as due to the presence of a fixative or anchoring substance, capable of interacting with the glandular secretion. As in adults this hypothetical substance appears to be present in certain tissues only, it does not seem impossible that in some cases it may likewise be irregularly distributed in the growing organism, leading to partial hypertrophies either in portions of the body or of single tissues even where the pituitary secretion was not necessarily excessive. Thus, the association of tissue tumours with overgrowth of the limbs might be explained, and the cases correlated with general gigantism and acromegaly. This supposition, I humbly submit, is not more fanciful or less supported by physiological evidence than those which it has the honour of following.

Bibliography.—The following are the more important or recent contributions to the subject, but it has been found impossible to make the list in any way exhaustive. Treiat and Monod: Archives Générales de Médecine, 1869. Adams: THE LANCET, August 7th, 1858, p. 140. Berend: Wiener Medizinische Wochenschrift, Band xlvii., 1897. Adams: Archives of Pediatrics, New York, xl., 1894, p. 901. (Good illustration). Leblanc: Contribution à l'Hypertrophie Congénitale Unilatérale, Thèse de Paris, 1897. McGregor: Glasgow Medical Journal, xli., 1894, p. 198. (Illustration and many references to literature.) Idem: Transactions of the Medico-Chirurgical Society, Glasgow, vol. i., 1895-7, p. 130. (Report of post-mortem examination.) Grieg: Edinburgh Hospital Reports, 1898, vol. v., p. 212. (Many references to literature.) Fowler and Johnson: Ibid., 1900, vol. vi, p. 113. (Skiagram of hands; many references to literature.) Hornstein: Virchow's Archiv, Band cxxxiii., 1893, p. 440. (Post-mortem report, and plates.) Gould and Pyle: Anomalies and Curiosities of Medicine, 1897, p. 350. (Several good illustrations.) Anderson: British Medical Journal. 1912, vol. ii., p. 773. (Paper on Asymmetry.) Reissmann: Australasian Medical Gazette, vol. xxi., 1902, p. 457. Froelich: Revue d'Orthopédie, 1908, No. 3. Hutchison: Reports of the Society for the Study of Disease in Children, vol. iv., 1904, p. 145 (post-mortem report), vol. iii., 1903, p. 194. Carpenter: Ibid., vol. vi., 1906, p. 153. Dietlein: Münchener Medizinische Wochenschrift, Jan. 20th, 1914, p. 130. (Illustration.) England: THE LANCET, 1902, vol. ii., p. 1711. Batty Shaw: Proceedings of the Royal Society of Medicine, vol. viii., Clinical Section, p. 15, December, 1914. Archibald: Brit. Med. Jour., 1915, vol. i., p. 595.

Bristol.

LEPROSY AND KEDROWSKY'S BACILLUS.

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MANY workers have announced their success in cultivating the leprosy bacillus; but, as a rule, the methods adopted have but little similarity, and their success lacks confirmation. For this reason the work of Kedrowsky calls for special consideration because Bayon[1] claims to have confirmed its accuracy. In a previous communication[2] we have described the experiments carried out by us of inoculating Kedrowsky's medium with leprous tissue and failing to obtain any culture. Text-books now describe the various methods by which the cultivation of the leprosy bacillus may be accomplished. We believe that we have demonstrated[3,5] the fallacious characters of all these methods, but Bayon[4,5] persists in his claim for the specific nature of Kedrowsky's organism.

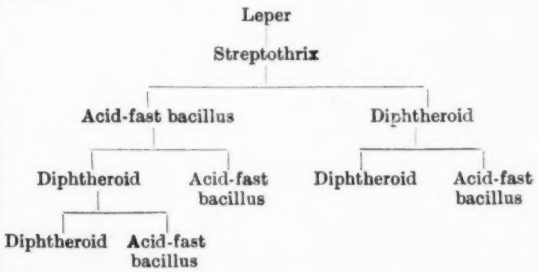
In 1900, from three cases of leprosy, Kedrowsky[6] cultivated organisms which he believed to have genetic relationship with the acid-fast bacillus found in leprous lesions. From two of the cases he isolated diphtheroids, from the third he isolated a streptothrix; and he considered these organisms to be variations of the leprosy bacillus, to which he attributed polymorphism. For his first experiment he used an old culture of the streptothrix, but ignored the diphtheroids, and gave no reasons for doing so. For the purpose of inoculation he prepared a thick emulsion of the streptothrix in bouillon. The streptothrix was not acid-fast. He inoculated two rabbits intracerebrally. One died next day, the other gradually recovered and a year later was in perfect health; it then received an intraperitoneal injection of the streptothrix emulsion. It gradually became thinner and developed paralysis of the hind legs. It was killed six months after the second inoculation. There were numerous tubercle-like nodules in the peritoneal cavity and microscopically acid-fast bacilli were found in these as well as in tubercles which could only be recognised microscopically in the liver, spleen, &c. No mention is made of the presence of non-acid-fast bacilli. He recovered in cultures an acid-fast bacillus and several varieties of diphtheroids.

Rabbits and white mice were inoculated with emulsions of the acid-fast bacillus. The rabbits died after one or two months, and the mice after three to five months. Large numbers of the bacilli were invariably injected. From the tubercles found in these animals he cultivated either acid-fast bacilli only or acid-fast bacilli and diphtheroids, but not a streptothrix, and none of the cultures showed any tendency to revert to the streptothrix.

Rabbits and white mice were inoculated with emulsions of the diphtheroids which had been recovered from the rabbits and mice. The rabbits died after two or three years, the mice after a year or so. In the tubercles acid-fast bacilli were found, and in those from the rabbits giant cells were observed, but no mention is made of non-acid-fast organisms. From the rabbits acid-fast bacilli were cultivated and from the mice diphtheroids.

One case recorded was that of a mouse which was inoculated with an acid-fast bacillus. From this animal a diphtheroid was recovered which was then injected into another mouse and the organism became acid-fast.

His results may be summarised in tabular form:—



The acid-fast bacillus was evidently more pathogenic than the diphtheroid, yet he believed them to be related and to have a common origin from the streptothrix, despite the fact that in cultures no tendency to reversion was noted.

In 1901, from a fourth case of leprosy, he did not cultivate a streptothrix, but did cultivate a diphtheroid similar, as he states, to one which he recovered from the first rabbit inoculated. The diphtheroid produced the same result in rabbits as that previously employed.

Bayon[1] cultivated a diphtheroid from two cases of leprosy. The diphtheroid after injection into mice and rats became acid-fast. He cultivated a streptothrix which became acid-fast in rats. He also notes that a streptothrix was recovered from a rat which had been injected with Kedrowsky's acid-fast organism—a feat which Kedrowsky does not appear to have accomplished.

We have been unable to discover the number of the cases from which Bayon obtained material in London. It is improbable that it was more than two or three, so that the whole evidence of the cultivation of the leprosy bacillus by these investigators rests on the material obtained from some six or seven cases. Bayon next went to Robben Island, where there was an abundance of material, but he does not appear to have cultivated the leprosy bacillus from other cases; it might reasonably be expected that he would have done so, or that at all events he would have tried. Duval[7] states that "Bayon of London, who cultivated an organism which he claims is identical with Kedrowsky's, has been unable to recover it from a second case, though working with the material of a large leprosy settlement in South Africa."

Both investigators record that placental agar is a medium on which the leprosy bacillus grows, but they state that a number of tubes must be inoculated with the material, and that in only a few of them will a culture develop. That, if true, is a remarkable phenomenon for which we have no parallel in bacteriology. Certain organisms require special media for their growth, but when the medium for any such organism is found every tube of that medium inoculated with material containing the living organism will develop a culture of it. Thus the tubercle bacillus may be obtained from sputum by inoculating the sputum into the groin of a guinea-pig. Later, the animal is killed and portions of the spleen are inoculated on to glycerine blood-agar. Every tube which has received a piece of spleen containing tubercle bacilli develops a culture of them. The numbers of bacilli in such a spleen are infinitesimal as compared with the numbers present in a nodule of leprous tissue. Yet we are asked to believe that the specific organism of leprosy will develop in a few, but only a few, of the tubes inoculated with leprous nodules. Moreover, the organism is a bacillus which has no morphological resemblance to the leprosy bacillus of Hansen, but which Kedrowsky and Bayon believe to have evolved from that organism.

The gonococcus requires special media such as ovarian agar, and every tube of that medium inoculated with material containing living gonococci will develop a culture of the gonococcus. A similar observation applies to the Koch-Weeks bacillus and the diplobacillus of Morax-Axenfeld. These instances are cited from our own experience,[8] and suffice to emphasise the strangeness of the results recorded by Kedrowsky and Bayon.

In our experiments material has been excised from 52 non-ulcerating cases of nodular leprosy. There was in every case abundance of acid-fast bacilli in the tissues excised and inoculated on the large variety of media employed, including those of Kedrowsky and Bayon.

In our first experiments it was not infrequent to get cultures of contaminating organisms, diphtheroids, streptothrices, and the like. The material was either cut up into small pieces or emulsified and, without delay, the tubes were inoculated. On incubation one or more of the tubes showed a growth dependent on the extent to which the material was contaminated, because the tissue is excised with care, and if contaminated only a few of the extraneous organisms are present. An exactly parallel result can be obtained by inoculating the material on ordinary nutrient agar in place of placental agar, so that if these organisms have a genetic relationship with the leprosy bacillus there is no need to employ special media in order to cultivate them. But the strongest evidence against such a relationship is the fact that in our later operations we have repeatedly excised nodules from lepers, inoculated the material on special media of all kinds, and have not obtained a single culture of any organism of any kind. In these operations no antiseptic was employed, so that there can be no possibility of the acid-fast bacilli having been killed. Indeed, we can now predict at the time of the operation the condition of the material. Thus, in the case of patient No. 51 it was decided to excise material from a nodule on the left ear; the two sutures for keeping the wound apart were placed in position, the skin was incised, and tension was made on the sutures; one of them tore right through the tissue. The edge of the wound on that side was held by a fixation forceps, but the tissue was rotten and there was continual trouble. The material was eventually excised; part of it was cut up into small pieces and part of it was emulsified. Thirty-six tubes of fish medium were inoculated; 9 of them were contaminated and 27 of them show no evidence of any growth after two months. This case contrasts with patient No. 52, from whose left ear leprous tissue was excised. The two sutures were placed in position, the skin was incised, the wound was made to gape, a fresh knife was used to deepen the wound, and from its depths the material was removed with another knife. Part of the tissue was cut up into small pieces and part of it was emulsified. The operation was a good one, and it was improbable that the material was contaminated. Thirty-four tubes of fish medium were inoculated, and not one of them was contaminated. After two months they are all free from growth.

These instances might be multiplied, but those given suffice to illustrate the ease with which one may be led into error. Bayon[9] in a recent criticism of our work states that our bacteriological methods were incomplete because we did not elaborate our researches on the diphtheroids, streptothrices, and the like. We repeat our previous assertion that those which we obtained were merely contaminators and had no genetic relationships with the leprosy bacillus, a conclusion which we believed justified by our experience.

In response to our request, Dr. Kedrowsky kindly sent us a culture of his organism. The culture was a profuse yellowish, crinkled growth, cheesy in consistence. It grows well on glycerine-agar and has a creamy appearance. It is a slender acid-fast bacillus without distinguishing characters. For purposes of comparison a communication was addressed to Bayon asking him to send us a culture of his organism. In response he sent us a culture made from Kedrowsky's strain and which he

claimed was identical with his own. In his published works Bayon writes in general terms, which make it difficult to determine what he has done with his own culture and what he has done with that of Kedrowsky. What he appears to have done is to have cultivated a diphtheroid from a leprous nodule and a streptothrix presumably from a leprous nodule, but whether from the same case or another is not stated. Both organisms were injected into animals, and from them cultures of an acid-fast bacillus were obtained. That acid-fast bacillus, he claimed, was identical with Kedrowsky's bacillus. He then appears to have abandoned his own culture or cultures, and to have carried out his subsequent experiments with that prepared by Kedrowsky. For the production of the condition in animals which Kedrowsky and Bayon claim to be leprosy large amounts of the culture have to be inoculated. In our experience a single inoculation has no effect on rats and rabbits. Bayon informs us that a small quantity inoculated into a guinea-pig will not produce lesions; therefore the culture is not one of the tubercle bacillus: no one would suspect it to be so from its appearance. If the organism be pathogenic in animals, then the inoculation of moderately small amounts of the culture should produce lesions, though after longer intervals, it may be, than are required for their production by large amounts. The fact that they can only be produced by massive injections suggests that these are caused by the large amounts and not by any inherent pathogenicity of the organism.

Why, if this is a culture of the leprosy bacillus and it can produce leprosy in animals, did neither investigator produce similar lesions by the inoculations of emulsions of leprous tissue? Bayon, at least, had an abundance of material. We have performed such experiments with uniformly negative results. So far as Kedrowsky's culture is concerned this is a matter of no importance, since the lesions produced by the living organism can also be produced by the dead organism, and similar lesions can be produced by either dead or living cultures of other acid-fast bacilli, as shown by the following experiments.

1. *Kedrowsky's culture, living.*—A culture on ascitic agar, 11 days old, was suspended in about 1 c.c. of salt solution, and the emulsion inoculated into the peritoneal cavity of a guinea-pig. The condition of the animal was in no way affected, and after three weeks it was killed. On opening the abdomen the great omentum was found rolled up along the greater curvature of the stomach and was adherent on the left to the spleen, which was bound down to the ribs by adhesions. The great omentum and the parietal peritoneum contained small caseous nodules and small tubercles resembling miliary tubercles. The lobes of the liver were stuck together by adhesions, and on the surface there were small tubercles which extended a short way into its substance. Smears from the nodules and tubercles showed great numbers of acid-fast bacilli, which were gathered into masses like the globi of leprosy. In sections the nodules and tubercles showed a patchy distribution of the acid-fast bacilli, which occurred either singly or in small bunches. The tissue containing the bacilli was necrotic. The bacilli did not occur elsewhere than in the nodules and tubercles.

2. *Kedrowsky's culture, killed.*—A culture on ascitic agar, 11 days old, was suspended in about 1 c.c. of salt solution. The emulsion was heated for 20 minutes at 100° C. The sterility of the emulsion was proved by subculture, and it was injected into the peritoneal cavity of a guinea-pig. The health of the animal was in no way affected, and three weeks later it was killed. The findings agreed in every respect with those observed in the case of the living organism.

3. *Kedrowsky's culture, living.*—A culture, 15 days old, on ascitic agar was emulsified in about 1 c.c. of salt solution and injected into the peritoneal cavity of a guinea-pig. The health of the animal was not affected, and six weeks later it was killed. Post mortem not a single nodule or tubercle could be found anywhere, and the organs appeared healthy. In smears prepared from the various organs acid-fast bacilli were not found. In sections prepared from the lungs, liver, spleen, suprarenal, pancreas, testicle, and kidney neither nodules nor acid-fast bacilli were found.

4. *Kedrowsky's culture, killed.*—A culture, 15 days old, on ascitic agar was emulsified in about 1 c.c. of salt solution. The emulsion was heated for 20 minutes at 100° C. The sterility of the emulsion was proved by subculture, and it was injected into the peritoneal cavity of a guinea-pig. The health of the animal was not affected, and six weeks later it was killed. There were one or two yellowish nodules in the omentum, along the anterior margin of the spleen there were a few yellowish-white deposits, and there was a small nodule on the outer surface of the spleen. An enlarged peritoneal gland was noted. In smears from these nodules and the gland acid-fast bacilli were found in fair number. The liver, lungs, and other viscera were perfectly normal, and in smears from them acid-fast bacilli were not found. The examination of sections confirmed these findings.

5. As a control to these experiments two freshly excised nodules of leprous tissue were emulsified in salt solution. The emulsion was rich in leprosy bacilli and measured 2 c.c. 1 c.c. of the emulsion was injected into the peritoneal cavity of a guinea-pig. Its health was not affected, and three weeks later it was killed. Not a trace of a nodule could be found anywhere, and all the organs appeared normal. In smears from the spleen acid-fast bacilli were found singly and in small clumps; they were not numerous. In smears prepared from a peritoneal gland acid-fast bacilli were very scanty; one bunch was noted. In smears from the liver acid-fast bacilli were very scanty, and in smears from the lung they were not found. Sections of the spleen, kidney, liver, lung, and suprarenal showed normal tissues free from necrotic areas.

6. 1 c.c. of the emulsion was heated for 20 minutes at 100° C. and then injected into the peritoneal cavity of a guinea-pig. Its health was not affected, and three weeks later it was killed. A small yellowish-white nodule was found on the upper border of the spleen, but none were found elsewhere, and the viscera were apparently normal. In smears prepared from the spleen nodule enormous numbers of acid-fast bacilli were found. In smears from the spleen, liver, and kidney acid-fast bacilli were scanty, and in smears from the lung and testicle they were not found. Sections of the liver, spleen, suprarenal, testicle, kidney, and lung showed normal tissue free from nodules and necrotic areas.

The number of leprosy bacilli, presumably living, inoculated in the case of experiment No. 5 was infinitely greater than would be injected for the production of tuberculosis in a guinea-pig, but was infinitely less than that injected in experiment No. 1. If the lesions in experiment No. 1 were not merely mechanical, then in experiment No. 5 similar lesions ought to have been produced. It may be contended that in the latter experiment a sufficient interval was not allowed to elapse in order that the relatively small number of leprosy bacilli might proliferate sufficiently to cause the lesions, but an exactly parallel experiment was performed and the animal was killed after four weeks. Not a nodule could be found anywhere, all the organs were apparently healthy, and only in smears from the spleen could a few acid-fast bacilli be found. It might still be contended that the interval was insufficient, but nine other guinea-pigs have been inoculated with leprous material. One died after 15 months and two after 19 months; neither nodules nor acid-fast bacilli could be found in them. Six are still alive; the intervals since inoculation range from 17 to 21 months, and they are all in perfect health.

Experiment No. 2 confirms the opinion that the lesions found in experiment No. 1 are due to the physical effects of the great number of bacilli

injected. Experiments No. 3 and 4 prove that the lesions are transitory; hence the necessity for the repeated injections advocated by Bayon, but the same lesions are produced by other acid-fast bacilli.

7. A culture, 8 days old, on ascitic agar of Bacillus phlei was emulsified in 2 c.c. of salt solution. 1 c.c. of the emulsion was injected into the peritoneal cavity of a guinea-pig. The health of the animal was not affected, and three weeks later it was killed. The parietal peritoneum was covered with an enormous number of tubercles. There were rows of miliary tubercles on the peritoneal covering of the intestine. The intestines were matted together, and the appearance resembled that seen in tuberculous peritonitis. There were nodules on the surface of the liver and spleen; the surface of the lungs was covered with miliary tubercles. Smears from the nodules showed enormous numbers of acid-fast bacilli. The smears were similar in every respect to those obtained from leprous lesions rich in bacilli. In sections the nodules showed caseation and necrosis.

8. 1 c.c. of the emulsion of bacillus phlei was heated for 20 minutes at 100° C. and then injected into the peritoneal cavity of a guinea-pig. Its health was not affected, and it was killed three weeks later. No tubercles were found in the lungs, but otherwise the findings agreed with those in experiment No. 7.

Exactly similar experiments were performed with the smegma bacillus. In the animal inoculated with the live bacilli, peritonitis with extensive caseous tubercular deposits was observed. In the animal inoculated with dead bacilli there was much less evidence of peritonitis, and only two nodules were observed; they were on the surface of the liver.

Experiments similar to Nos. 7 and 8 were made with Rabinowitsch's bacillus. In the animal inoculated with the living organism only one caseous nodule was observed; it was in the omentum, and in smears from it acid-fast bacilli were found. In the animal inoculated with the dead organism no morbid changes were observed.

The caseating and necrotic character of the lesions produced by these organisms are comparable to those produced by Kedrowsky's organism. The transitory character of the lesions is also comparable. It is obvious that they could be renewed or maintained by further inoculations, as has been done by Bayon. The lesions produced by the living organisms are the same as those caused by the dead organisms, but similar lesions are not produced by inoculations of emulsions of leprous tissue. There is therefore no evidence that the acid-fast bacillus of Kedrowsky is the leprosy bacillus.

Bibliography.—1. Bayon, H.: Acid-fast and Acid-resisting Germs Cultivated from Cases of Human Leprosy and their Determination, Journal of the London School of Tropical Medicine, vol. i., p. 45, 1911-12. 2. Fraser, H., and Fletcher, W.: The Bacillus Lepræ: Has it been Cultivated, THE LANCET, vol. ii., p. 918, 1913. 3. Twelfth and Thirteenth Annual Reports, Institute for Medical Research, Kuala Lumpur. 4. Bayon, H.: Further Notes on Leprosy Organism, Journal of the London School of Tropical Medicine, vol. i., p. 129, 1911-12. 5. Bayon, H.: The Leprosy Cultures of Clegg, Duval, Kedrowsky, Rost, and Williams: A Comparative Experimental Study, THE LANCET, vol. ii., p. 456, 1912, and Brit. Med. Jour., vol. ii., p 1191, 1912. 6. Kedrowsky, W. I.: Experimentelle Untersuchungen über Lepra-impfungen bei Tieren, Zeitschrift für Hygiene und Infektions-krankheiten, vol. lxvi., p. 1, 1910. 7. Duval, C. W.: The Behaviour of the Hansen Bacillus in Vitro, American Journal of Tropical Diseases, vol. ii., p. 185, 1914. 8. Usher, C. H. and Fraser, H.: An Analysis of a Series of Consecutive Conjunctivitis Cases seen in Aberdeen, Royal London Ophthalmic Hospital Reports, vol. xvi., p. 1. 9. Bayon, H.: The Micro-organism of Leprosy: Has it been Cultivated? Lepra, vol. xiv., p. 187, 1914.

LONDON SCHOOL OF MEDICINE FOR WOMEN.—On June 24th Princess Alexander of Teck presented the prizes won during the winter session by the successful students at the London School of Medicine for Women. The chair was taken by Miss Aldrich-Blake, the dean, who said that the number of new entries for October next already far exceeded those of the preceding year.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF GASTRIC AND DUODENAL PERFORATION: THE USE OF "CORNER'S PLUG."

BY H. W. MILLS, M.R.C.S., L.R.C.P.LOND.

IN THE LANCET of Jan. 31st, 1914, p. 355, Mr. William S. Dickie criticised the use of "Corner's plug" in duodenal perforations. That an omental or gauze plug in such cases is not only often necessary owing to the exigencies of the case, but often very successful, I think few surgeons of experience will dispute. The condition of the patient is generally more or less desperate. The perforation of the bowel is frequently of considerable size, and the local condition usually such that stitches will not hold unless extensive infolding be done, a procedure which results in such narrowing of the duodenum as to make necessary immediate posterior gastro-enterostomy, for mechanical reasons.

Now, whereas posterior gastro-enterostomy, together with occlusion by plication of the duodenum—for without such occlusion posterior gastro-enterostomy is useless—is the proper treatment when the patient is in good condition and is operated on within a few hours of the perforation; yet such is emphatically not good treatment when the patient is desperately ill and every moment is of great importance; on the contrary the "Corner's plug" is here *the* method to use in the interests of the patient. Gastro-enterostomy can easily be done if necessary, which often it is not, a little later on.

The following cases will help to substantiate the above statements:

CASE 1.—The patient, a man aged 32, was brought into the Ramona Hospital, San Bernardino, California, a distance of 50 miles from the country, with obvious symptoms of perforated duodenal ulcer. Pulse 128, very weak and irregular; temperature 97·4° F. The history showed that the patient was addicted to alcoholic excesses and had suffered from periodical attacks of "indigestion," the pain coming on several hours after meals and being relieved by food, also by bicarbonate of soda. Twenty-eight hours previously, his stomach being empty at the time, he had suddenly been taken with severe abdominal pain which had caused him to fall down and collapse. A medical man was called, who gave him a dose of morphine at once. Thereafter he felt somewhat relieved, although several subsequent injections of morphine had to be given to relieve the pain. Board-like rigidity of the abdomen obtained, also great pain and tenderness over the duodenal site.

On opening the abdomen a large perforation half an inch in diameter was found in the first part of the duodenum anteriorly. The edges were friable and would not hold sutures, and infolding to the extent of rendering satisfactory suture feasible would have almost occluded the lumen of the gut. Gastro-enterostomy was out of the question owing to his desperate condition. The opening was plugged with a large tag of somewhat inflamed omentum held in place by one catgut suture, and a gauze wick surrounded by indiarubber tissues led down to the site of the lesion and the wound closed around it. The pelvis, which contained a considerable amount of yellowish fluid, was sponged out, and a drainage-tube led into the pouch of Douglas through a suprapubic stab wound. The patient was placed in Fowler's position and proctoclysis by Murphy's method was instituted. The tube was removed in 48 hours.

The patient made an uninterrupted recovery and declined to consider a subsequent gastro-enterostomy. He has remained quite well.

CASE 2.—The patient, a woman aged 29, with no previous history of indigestion or any other trouble, was brought into hospital 12 hours after the rupture of the duodenal ulcer had occurred. The symptoms were typical and her condition was bad. Pulse very weak and rapid.

On opening the abdomen a small anterior perforation in the first part of the duodenum was at once found and closed by suture; the pelvis was drained as in Case 1. Eight days subsequently a secondary rupture occurred, but the patient was now in a much better condition, and being in hospital was re-operated upon within half an hour. The duodenum was occluded by plication, a posterior gastro-enterostomy was done, and the patient promptly recovered and has remained well.

CASE 3.—The patient, a woman aged 45, on whom I had performed panhysterectomy five years previously for a 12 lb. fibroid of the uterus, was admitted with a recently perforated duodenal ulcer. Her condition was good. The perforation was closed by suture, the duodenum occluded by plication, and a posterior gastro-enterostomy was done. A rapid recovery was made and she has remained well.

Cases 1 and 2 would probably have died had immediate gastro-enterostomy been done. Case 1 would probably have recovered just as well had a gauze plug been substituted for the omental one; but Mr. Corner recommends that his gauze plug be removed under an anæsthetic in 48 hours, whereas when an omental plug is made use of the cigarette drain can be removed in five days without an anæsthetic.

San Bernardino, California.

A CASE OF EXTRAORDINARY TRAUMATIC DEFORMITY WITH ŒDEMA.

BY P. C. PERHAM TAYLOR, L.R.C.P. & S. EDIN., &c.

THE patient, a woman aged 46 years, was born at Whatting, Sussex. At the time of birth she was quite natural. When about 2 years old, on her mother taking her out of bed one night, she fell. There was no history of any previous fall or accident. All use went out of her legs. She was put to bed, and the doctor was sent for. She lay unconscious for about six weeks. On recovery her legs and arms were deformed, but there was no swelling.

About three years ago swelling of the legs set in, and they have been gradually getting into their present condition, as shown in the photograph. She came into the Hailsham Union Infirmary at that time. She is able to sit up in bed, and amuses herself with fancy work, &c.

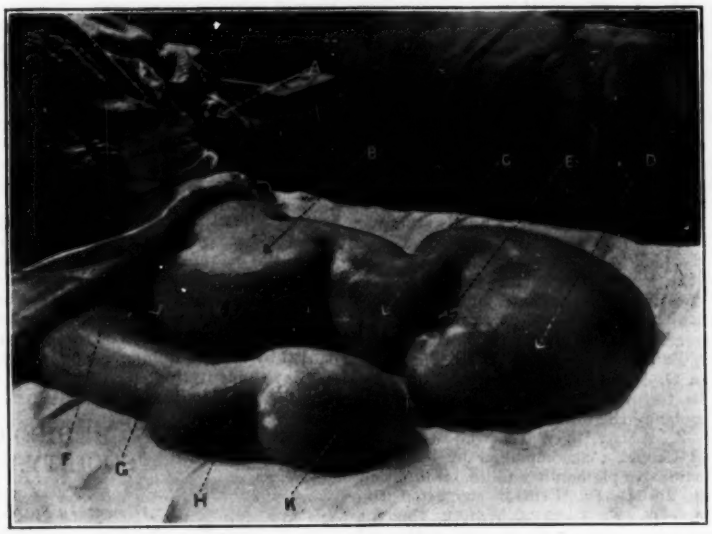
Her present condition is as follows. She is most cheerful and suffers no pain, only a feeling of heaviness in the legs, which is relieved when she is tapped, about every six weeks. The heart and lungs are normal. The bowels act only with aperients. The urine is normal; no albumin. She has always been regular, the flow being abundant and painful, until the menopause, which occurred about two years ago. There is no swelling of the arms or hands, though the latter are deformed, as is shown in the photograph reproduced.

Family history: Her father died at the age of 51 years from Bright's disease. Her mother is alive, aged 74, and suffers from her heart. Of her brothers, two are alive, aged respectively 41 and 38, both being healthy; two are dead, one at 21 from phthisis and one in infancy. One sister is alive, aged 56, and is healthy; three died in infancy. There is no history of any paralysis in the family.

I am indebted to Mr. F. S. Parker, chemist, High-street, Hailsham, for the photograph.

Hailsham, Sussex.

Illustrating Mr. P. C. Perham Taylor's Case of Traumatic Deformity.



A, Left hand; B, Left femur; C, Left tibia; E, Left big toe; D, Left foot: F, Right femur; G, Right tibia; H, Right heel; K, Right foot. It is impossible to tell, owing to the swelling, where the left knee is, as the patella cannot be felt.

AN UNUSUAL CASE OF PERFORATED ULCER OF THE ŒSOPHAGUS.

BY GRAHAM W. CHRISTIE, M.B., CH.B. EDIN.,
RESIDENT MEDICAL OFFICER, THE INFIRMARY, STOCKPORT.

THE patient, aged 60, was admitted to Stockport Infirmary on June 21st, at 1.30 A.M., suffering from intense dyspnœa and complaining of acute pain all over the abdomen. The history was that he was in perfect health until 8.30 P.M. on the previous evening, when after a few glasses of beer he was taken ill suddenly with violent pain in the epigastrium, which doubled him up and was soon followed by an attack of vomiting.

On admission the patient was suffering from collapse and intense dyspnœa, simulating a bad attack of asthma. The temperature was 99° F., the pulse-rate 125, and the respirations shallow and 50 per minute. What he complained of most was intense pain in the epigastric region and acute stabbing pain in the back. His condition differed, however, from that experienced in perforated gastric ulcer in that he was most comfortable and had least pain when he sat bolt upright in bed.

On examining the abdomen there was found to be practically no movement on respiration, and it was rigid all over. There was marked tenderness on palpation over the epigastrium, and the most tender part of all was in the upper

portion of the right rectus muscle. There was no dullness in the flanks or above the symphysis pubis.

On examining the chest the breath sounds were faint all over, and there was an area of dullness at the base of the left lung with diminished breath sounds on auscultation. He had been the subject of asthma and chronic bronchitis for years. He had never had any trouble with his stomach before. He was addicted to alcohol but not to excess.

The symptoms, then, were typically those of a perforated gastric or duodenal ulcer. The abdomen was opened by an incision through the right rectus sheath. No free fluid or gas was present, and close examination of the stomach and duodenum revealed no perforation. The appendix and gall-bladder were normal, and there was no evidence of any organic disease inside the abdomen to account for the symptoms. The abdomen was closed and a drainage-tube was inserted into the pouch of Douglas.

Three hours after the operation the patient developed a sudden attack of intense dyspnœa, accompanied by marked cyanosis and a feeble rapid pulse, and died.

Necropsy.—At the post-mortem examination there was nothing to be found inside the abdomen. On opening the thorax the left lung was collapsed and the left pleural cavity full of a dark-brown fluid, which smelt of stale alcohol, and contained particles of vegetables and food material floating in it. On examining the œsophagus a perforation about the size of a shilling was found some two inches above the diaphragm. The edges of the perforation were thinned out, indicating the presence of an old simple ulcer. The lower six inches of the œsophagus were black in colour as a result of its digestion by the gastric contents which had regurgitated back from the stomach into the thorax. Both lungs were emphysematous. Death was due to hydrothorax.

My thanks are due to Dr. G. P. Henderson for allowing me to operate on the case and also for permitting me to publish these notes.

Stockport.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A MEETING of this section was held on June 17th, Dr. J. J. PRINGLE, the President, being in the chair.

The following cases were shown:—

Dr. E. GRAHAM LITTLE: 1. A middle-aged lady suffering from Mycosis Fungoides, the initial phase of which had been diagnosed as psoriasis, and for which X rays had been applied over almost the entire body surface. The tumour formation followed the X ray treatment, and Dr. Little was of the opinion that there was causal connexion between the two conditions.—The PRESIDENT, Dr. KNOWSLEY SIBLEY, Dr. GEORGE PERNET, Dr. S. E. DORE, Dr. J. H. SEQUEIRA, and Dr. H. G. ADAMSON considered the development of tumours to be fortuitous, and urged continuance of the X ray treatment as being the only method of controlling the tumour growth.—2. A boy, aged 12, who was in a condition of profound Cachexia accompanied by excessive diarrhœa and a very extensive pigmentary follicular eruption over the trunk and limbs.—Dr. LITTLE suggested the diagnosis of pellagra.—Dr. F. PARKES WEBER thought that Addison's disease was a more likely explanation of the phenomena.

Mr. G. F. STEBBING (for Mr. LAMING EVANS): 1. A case of Acute Linear Atrophy of the Skin in the Lumbar Region. The patient exhibited no toxæmic manifestations, but had been inoculated against typhoid fever last October.—The case was discussed by the PRESIDENT, Dr. ADAMSON, Dr. PARKES WEBER, Dr. PHINEAS ABRAHAM, Dr. LITTLE, and Dr. D. WALSH.—2. A case of Hydroa Æstivalis of mild type in a girl, aged 14, the typical seasonal variations of which were unusually marked.—The case was discussed by Dr. PARKES WEBER, Dr. ADAMSON, Dr. PERNET, and the PRESIDENT.

Dr. ABRAHAM: A case of Oriental Sores in a young man dating since February, 1915, and contracted in the Persian Gulf, where he had suffered much from mosquito bites. The sores had been successfully treated by scraping and pure carbolic acid. Sections from the case exhibited Leishman-Donovan bodies.—Mr. T. P. BEDDOES suggested that cultures might still be obtained from the lesions.—Dr. PERNET discussed the possibility of recovery without operative procedures.

Dr. J. A. NIXON (Bristol): A man, aged 23, with deep universal Pigmentation of the Skin and Mucous Membranes of the Mouth of six years' duration accompanied at its onset by severe dyspepsia and neurasthenia. The pigment was always increased by exposure to the sunlight. Dr. Nixon was of opinion that there probably had been some lesion involving the suprarenals or solar plexus.—Dr. SEQUEIRA referred to a case presenting similar pigmentation, the patient having all the signs and symptoms of pernicious anæmia, but improving greatly, even as regards the pigmentation, under arsenical treatment.—Dr. PARKES WEBER supported Dr. Nixon's view that the patient had had Addison's disease, and the PRESIDENT shared this opinion, having had a similar case under his observation.—Dr. ABRAHAM, Dr. WALSH, and Dr. SIBLEY also spoke.

Dr. PERNET: 1. A typical case of Morphœic Sclerodermia on the thigh of a girl aged 14. 2. An Extra-genital Primary Syphilitic Sore on the wrist of a boy with a characteristic, generalised, syphilitic eruption.

Dr. PARKES WEBER: A woman who had been a habitual morphinomaniac for 40 years, and who presented blue staining similar to tattoo marks over the seats of the injections into the arms and front of the chest. Dr. Parkes Weber attributed the colour of these spots to some iron substance derived from the needle of her hypodermic syringe. The case also presented a few small cheloids, upon the rarity of which in Europe Dr. Parkes Weber commented as compared with their frequency among the Chinese and black races.

Dr. E. A. COCKAYNE (introduced by Dr. PARKES WEBER): A child with Congenital Sclerodermia and Sclerodactylia. The child was hydrocephalic, but the Wassermann reaction was negative.—Dr. WEBER and Dr. ADAMSON confirmed the exhibitor's diagnosis of true congenital sclerodermia rather than of sclerema neonatorum.

Dr. WALSH: A case for diagnosis with microscopic sections in a man, aged 25, who had a nodular eruption on the right side of the forehead with some atrophic pits and scars.—Dr. J. M. H. MACLEOD regarded the case as allied to acne agminata, a view which was shared by Dr. ADAMSON, Dr. A. M. H. GRAY, and the PRESIDENT.

Dr. J. H. STOWERS: 1. A very well-marked case of severe Lichen Planus Atrophicus affecting the back of the neck of a young woman. 2. A well-marked case of Adenoma Sebaceum.

Dr. DORE: A woman, aged 43, with Folliculitis Decalvans and associated Lichen Spinulosus of the body which closely resembled a case shown at a recent meeting by Dr. Little, in which the diagnosis of Darier's disease had been discussed but negatived after microscopic examination.—Dr. LITTLE, Dr. ADAMSON, and Dr. MACLEOD spoke on the case.

Dr. A. EDDOWES: A case of Circinate and Atrophic Lichen Planus in a woman, aged 30, of one year's duration, accompanied by intense itching.—The PRESIDENT suggested X rays to allay the irritation.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Alimentary Stasis.

THE Cavendish Lecture was delivered by Professor ARTHUR KEITH, F.R.S., on June 25th, at the West London Hospital, Mr. ASLETT BALDWIN, the President, being in the chair.

The subject of the lecture was Alimentary Stasis, the lecturer explaining that he had extended the scope of his remarks to embrace not only stasis of the great bowel but also of the other parts of the alimentary canal. An examination of Auerbach's (mesenteric) plexus showed that at all parts of the alimentary canal it was a composite tissue, containing nerve cells, numerous fine nerve fibres, and an abundant third element—a form of branched cell which in its structure and staining reaction seemed to be intermediate between nerve cell and muscle cell. Apparently the plexus effected direct unions with the muscle cells through the third or intermediate element. The nodal tissue in which the heart beat arises and the bundle by which the impulse is distributed in the heart the lecturer regarded as of the same nature as Auerbach's tissue. At points where movements commenced in the alimentary canal Auerbach's tissue was particularly abundant, in some cases forming nodes. Physiologists have shown that every part of the alimentary canal has its own rhythm and is always in a state of rhythmical contraction. Further, it has been shown that in the duodenum, in the jejunum, ileum, and in the proximal part of the colon the intrinsic rhythm decreases from the commencement to the end of each segment. Professor Keith regarded the alimentary canal as divisible into seven rhythmical segments or zones, just as the heart is divisible into two zones—auricle and ventricle. He said that it was at the junction of the two zones of the heart that interruption of rhythm is most liable to occur, giving stasis, or "back pressure" in the veins. We should expect interruptions of the rhythm of the alimentary canal at similar junctional points. And a review of the observations of radiologists showed that the usual sites of stasis are at such junctional regions; the junction of the œsophagus and stomach, of the stomach and duodenum, of the duodenum and jejunum, of the ileum and cæcum, of the proximal and distal colon, and the junction of the colon and rectum. Professor Keith was of opinion that all forms of alimentary stasis would find a satisfactory explanation when we knew more of the motor mechanism of the canal musculature.

After the lecture, which was enthusiastically received, the members and guests adjourned to the rooms of the Post-Graduate College, where a conversazione was held, with medical and surgical exhibits.

The Annual General Meeting.

The annual general meeting of the society will be held at the West London Hospital on Friday, July 16th, at 5 P.M., when the annual report of the council, the treasurer's financial statement, and the editorial secretary's financial statement will be presented, and the officers for 1915–16 will be elected.

Members are invited to make donations of half-a-crown and upwards towards the provision of new books for the library. Such donations should be sent to the honorary librarian, Dr. E. A. Saunders, 37, Harley-street, W.

MEDICO-LEGAL SOCIETY.—The following have been nominated by the council for election to office at the annual general meeting on Tuesday, June 22nd, 1915:—President: Professor Harvey Littlejohn, M.A., M.B., F.R.S.E. Past presidents: Sir William J. Collins, M.D., F.R.C.S., Sir John Tweedy, LL.D., F.R.C.S., and the Right Hon. the Earl Russell. Honorary treasurer: Walter Schröder. Honorary secretaries: W. G. Cooper-King and F. Graham Crookshank, M.D. Council: Rigby Swift, K.C., M.P. Honorary editor of Transactions: R. Henslowe Wellington. Previous to the annual meeting a special general meeting considered the wording of certain rules of the society.

THE PRODUCTION OF FOOD.—The Government have already appointed a committee, having Lord Milner as chairman, to consider and report on the steps to be taken for maintaining, and if possible increasing, the present production of food in England and Wales, on the assumption that war may be prolonged beyond the harvest of 1916. Similar committees have now been appointed to deal with Scotland and with Ireland, the chairmen being the Right Hon. Eugene Wason, M.P., and Mr. T. W. Russell, M.P., respectively.

Reviews and Notices of Books.

Quain's Elements of Anatomy.

Edited by Sir EDWARD ALBERT SCHÄFER, Professor JOHNSON SYMINGTON, and Professor THOMAS HASTIE BRYCE. Eleventh edition. Vol. IV., Part 1, *Osteology and Arthrology*. By T. H. BRYCE. With 247 figures in the text and 28 coloured plates. London: Longmans, Green, and Co. 1915. Pp. 329. Price 12*s.* 6*d.* net.

FOR some of the previous volumes of the eleventh edition of this familiar text-book our praise has been extended within very definite limits; the appearance of this volume has certainly justified our opinion, for by its very excellence it accentuates the defect of want of uniformity of treatment to which we have previously called attention. For this volume we may say that it fulfils what one has a right to expect in a new edition of Quain—that is to say, it is a volume possessing all the merits of the very excellent tenth edition with the subject well brought up to date. The tenth edition could be justly called a British anatomy, which beyond being a merely accurate text-book was a real work of reference. It was such a book, brought up to date, that the admirers of Quain's anatomy looked for at the hands of the new editors.

Some of the volumes already issued do not at all fulfil this expectation, but in the present case Professor Bryce has produced a book worthy of all the traditions of the fine work he is revising. Vol. IV., Part 1, is a well-written and well-illustrated text-book; it has an ample bibliography and a sufficiency of comments upon recent literature and discussion of recent views to make it also an excellent work of reference. We congratulate Professor Bryce upon the success he has achieved in the production of this volume.

A Manual of Gynæcology.

By SAMUEL J. CAMERON, M.B., Ch.B. Glasg., Assistant to the Professor of Midwifery, University of Glasgow; Gynæcologist and Assistant Obstetric Surgeon to the Royal Glasgow Maternity and Women's Hospital; and Gynæcologist to Out-patients, Glasgow Western Infirmary. With 232 illustrations. London: Edward Arnold. 1915. Pp. 552. Price 18*s.* net.

WE are told in the preface that this book is founded on the lectures given by the author to students of the University of Glasgow during the last ten years, and that it is the first text-book of gynæcological surgery in which the teachings of the Glasgow school have been put before the public. Considering the enormous mass of clinical material that Glasgow possesses, one expects that such a volume will be rich in clinical detail. This, indeed, is the case; points are constantly emphasised by shortly quoting a personal experience—such quotations are pleasingly brief and do not consist of the full histories of the patients such as occasionally are found encumbering the pages of standard works. Dr. Cameron gives the impression of writing for the qualified man to whom he wishes to indicate the methods that he has personally found to be best or which at any rate are sanctioned by long use, rather than for the student who merely wishes to have a brief résumé of all methods of treatment in case he should be asked to discuss them in an examination paper.

The author occasionally states quite frankly that the views that he gives are not accepted by all gynæcologists at the present time. This personal

element is one of the charms of the book, as the author has had great experience and gives the results of it. In these circumstances it is difficult to criticise the statements that the volume contains, but among several points where other eminent authorities are at variance with Dr. Cameron may be mentioned the question of sterilising every patient at her first Cæsarean section. He regards every patient who becomes pregnant after Cæsarean section as being in constant danger of rupture of the uterus, and states that "no excuse can relieve the operator of the responsibility unless he has omitted, at her own request, to sterilise the patient," and "more obstetricians would probably resort to sterilisation if they did not erroneously credit silk with the power of keeping the uterine tissues firmly lashed together for months." Such statements ought not to be included in a text-book, however strong the personal views of the writer, without at the same time telling the student reader that most operators do not live in fear of their scars yielding, that as many as six Cæsarean sections have been successfully performed on one patient, and that patients, who have been sterilised, have frequently gone to other surgeons to ask if another laparotomy would enable them to become capable of bearing another child. Similarly many authorities will not agree with digital exploration of the bladder as an alternative to cystoscopy (a modified Kelly cystoscope is illustrated), the application of drugs on probes to the endometrium in the treatment of symptoms, and the high place given to the Alexander-Adams operation.

The illustrations are among the best that have appeared in a British text-book; they are all original and show exactly what is necessary to elucidate the writing. The microphotographs are reproduced with unusual success. Taken as a whole the book is admirably adapted for its purpose; the chapters on uterine myomata, adeno-myomata, and ovarian tumours deserve special note.

The Diagnostics and Treatment of Tropical Diseases.

By E. R. STITT, A.B., Ph.G., M.D., Medical Director of the United States Navy, and Head of the Department of Tropical Medicine in the United States Naval Medical School. With 86 illustrations. London: H. K. Lewis. 1915. Pp. 421. Price 8*s.* net.

THIS is a companion volume to the same author's work on laboratory methods. His original intention was to prepare a work which would enable the student to have before him in intimate relation the laboratory and the clinical aids to the diagnosis of tropical diseases, but certain difficulties arose and consequently the two parts have been published separately. With a view, however, to making the present volume complete in itself, Dr. Stitt has prepared under each disease a paragraph dealing with the laboratory diagnosis of the particular malady under consideration.

The book is divided into two parts, the first of which is entitled "Tropical Diseases and their Treatment," and the second, the "Diagnostics of Tropical Diseases." Special attention is paid in the first part to epidemiology and prophylaxis. The diseases are classified as those due respectively to protozoa, bacteria, or filterable viruses; and infectious granulomata and tropical skin disease. According to the author's preface, the book has been written with the aim not only of giving the essential points of each disease, but also of setting them out in a manner "so cross-referenced that the student has the subject presented to him from every angle."

We can thoroughly recommend Dr. Stitt's work to every student and practitioner of tropical medicine. It contains a large amount of sound and up-to-date information presented in a concise way in a comparatively small space. It is, moreover, written in an interesting and very readable fashion.

Medical Electricity, Roentgen Rays, and Radium. With a Practical Chapter on Phototherapy.

By SINCLAIR TOUSEY, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York. Second edition, revised and greatly enlarged. London and Philadelphia: W. B. Saunders Company. 1915. Pp. 1219. Price 35*s.* net.

WE reviewed the first edition of this comprehensive volume in October, 1910, and the present edition follows essentially the same lines. But the rapid advances in the subjects embraced in the title make it necessary to issue further editions at intervals, and not only the writing, but even the revision of a large work such as this is no small task—which probably accounts for a lapse of nearly five years between the two editions.

This book is a most valuable work of reference, and scarcely any question within the indicated scope can arise that is not answered in some way in its pages. Full and up-to-date information is available in technical electricity and electro-physiology; the effects of the various forms of current on the tissues and the organism generally are considered in connexion with electro-diagnosis and electrotherapy. These subjects, with a chapter on phototherapy, take up about one-half the volume, most of the remaining half dealing with the X rays. Throughout this part the author's thoroughness is apparent on all sides. His descriptions are clear and concise, and the free use of diagrams and illustrations makes the text easy to follow and understand. His references to the X ray tube are well worth careful study, and the excellent coloured illustrations of tubes in action will be helpful to those who have yet to master the vagaries of this important source of radiation. The treatment of X ray diagnosis is marked by the completeness that characterises the whole volume; but we think that some of the illustrations from radiographs are hardly up to the usual standard, and the section on disorders of the digestive system is not as full as it might be.

In the section on X ray therapy we think it unwise for anyone in this country to follow the system of dosage devised and used by the author. The Sabouraud is more or less universal here, but for climatic reasons it is not so suitable in America, and this accounts for other methods being employed there. The volume concludes with a short chapter on radium.

A Manual of Chemistry for Students of Medicine.

By ARTHUR P. LUFF, M.D., B.Sc. Lond., F.R.C.P. Lond., F.I.C.; and HUGH C. H. CANDY, B.A., B.Sc. Lond., F.I.C. Fifth edition, enlarged. With 62 illustrations. London: Cassell and Company, Limited. 1915. Pp. 660. Price 8*s.* 6*d.* net.

THIS book has evidently met the needs of those beginning the study of medicine quite well, inasmuch as the present issue is a fifth edition. Chemistry in its relations to medicine widens so much day by day that it becomes difficult to provide in the limits of a manual a complete outfit for the student. But one of the authors perfectly well justifies the preparation of this work when he states that "it is not necessary, or even advisable, that the student should become acquainted in the *first year* [the italics are

ours] with a large number of chemical facts; but it is of fundamental importance that, from the commencement of his study, he should see such facts from the right point of view, so that their correct interpretation will naturally occur to his mind. The present revision has been specially directed to secure this end." In other words, it is the beginner of a course of chemistry, planned with reference to medicine, to whom the book will appeal, and the authors may be congratulated on having packed so much information and descriptive matter in the space at their disposal without sacrificing any important point or detail. Further, modern developments of the science, such, for example, as ionization, have received attention in this edition. We see no excuse for the authors adopting the symbol Cy for cyanogen. They sometimes use Cy and sometimes CN. It would be just as reasonable to use Am for ammonia instead of NH_3.

We do not know a handier volume for the medical student beginning his chemical studies; principles and practice are alike soundly treated.

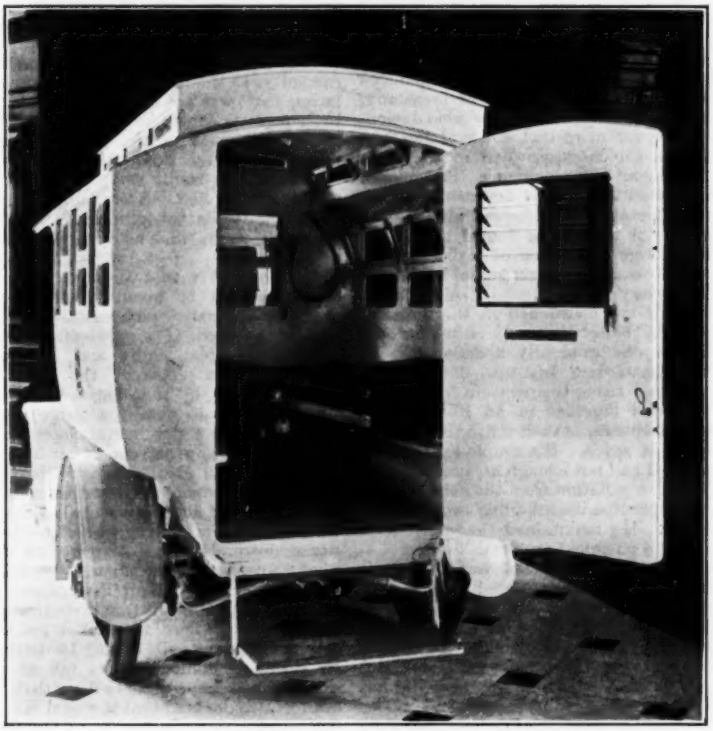
JOURNALS.

Archives of Radiology and Electrotherapy.—Early in the present year we had occasion to refer to the change of editorship of the *Archives of the Roentgen Ray* consequent on the retirement of Mr. W. Deane Butcher, who had for so many years conducted the journal with conspicuous success. To the present editors and others it has seemed that the title of the journal did not sufficiently indicate the scope of its work, and with the further idea of making it a more truly representative British journal than it has been in the past the title has been altered to the *Archives of Radiology and Electrotherapy*. Incidentally we note that advantage has been taken of the occasion to eliminate from the list of collaborators those belonging to nations who cannot be regarded as honourable foes in the light of recent events. The first number under the new title is a good augury for the future.—Mr. C. R. Kempster contributes an interesting article on the inhibitive effect of the X rays upon malignant growths, in which he shows that the properties of proliferation and reproduction suffer most from irradiation.—Dr. E. P. Cumberbatch deals with the treatment of non-malignant growths by means of diathermy.—Dr. C. A. Waters, of Baltimore, describes an important modification in the usual method of examining the accessory sinuses of the nose by radiography.—Mr. C. Thurstan Holland illustrates a case of stone in the submaxillary gland.—Dr. J. Metcalfe shows skiagrams of a curious congenital deformity of the hands and forearms.—As heretofore, there are sections devoted to the reports of the proceedings of societies, new instruments, notes and abstracts, and correspondence. The general construction and arrangement of the journal has not been altered, and it is doubtful if this could be improved upon. The illustrations are up to that high standard which we have learned to associate with the past issues of the *Archives of the Roentgen Ray*, and under its new title and with its wider aims the journal should receive support from the ever-increasing numbers that are being attracted to the study of radiology and electrotherapy.

New Inventions.

AN ELECTRICAL MOTOR AMBULANCE CAR.

THE accompanying photograph illustrates the Electrical Motor Ambulance recently supplied by Messrs. J. and A. Carter, New Cavendish-street, W., for the City Corporation of Durban, South Africa. While the chassis is constructed on definite and well known lines, the mounting of the vehicle and the design of the body with the interior accommodation are quite new, and many advantages are claimed for them. The chassis is of a type identical with two of those now in use in the City of London, with Greenwood and Batley's 8 h.p. twin motor and Tudor Ky, B.9 type battery. The car is fitted with 6 speeds forward, reverse, and electric brake, in addition to hand and foot brakes. It is mounted on Rudge Whitworth steel detachable wheels complete with spare wheel, and 820 × 120 Dunlop pneumatic tyres (three tyres steel studded). The body of the car, framing, and exterior and interior panelling are of teak throughout, specially built to withstand the climatic conditions of Durban, and the car is finished in white ripolin. The interior is lined with aluminium and finished like the exterior in white ripolin. Special ventilation is obtained by a lantern roof with opening glass frames at each side and ends, by special window fasteners to the main window frames, and by glass louvred windows in metal frames in the front end of the car and in the door at back. The car provides accommodation for two invalids or injured, the stretchers being fitted with Carters' patent extension gear, enabling the patient to be loaded without the necessity for attendant climbing up into the car.



The accessories include a metal aseptic detachable seat inside the car for nurse or attendant, metallic speaking-tube for communication with driver, a metal case containing complete first-aid equipment, and a plated rack containing water and stimulant bottles, &c., in metal cases.

MODERN VIEWS ON VENTILATION.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Now that so many private dwellings, the public rooms of hotels, assembly rooms, riding schools, school rooms, and all kinds of commodious buildings, not constructed to serve as hospitals, are nevertheless receiving the wounded soldiers as they arrive from the front, the difficult problem of ventilation has to be solved on a very large scale. This calls for all the more attention as of late years good cause has arisen to show that principles which used to be generally accepted are no longer considered impeccable.

At the beginning of the year an important account of the most recent theories on the subject, and of some valuable experiments, appeared in the *Official Bulletin* of the International Office of Public Hygiene, having previously been published in the *Journal of the American Medical Association*. The publication has now been in the hands of the public health authorities of 32 governments for some little time, and as sanitary reformers in these various countries study the Bulletins of the International Office, we may hope that modern teaching in regard to ventilation may become widely known. The care of the wounded renders this question of practical urgency at the present moment.

First, it is pointed out in the Bulletin that even before the discovery of oxygen the respired breath was believed to contain a noxious principle, and subsequently the evil was attributed to carbonic acid gas. But at the beginning of the nineteenth century the presence of another poison in crowded and inefficiently ventilated rooms was suspected, and in 1851 Cavarret demonstrated that animals died when placed in an overcrowded enclosure, though the excess of carbonic acid was withdrawn and oxygen supplied. Brown-Séquard and d'Arsonval, after condensing the breath of men and dogs, and injecting this into animals, produced symptoms of poisoning. Du Bois-Reymond said this had an albuminous base and called it "anthropotoxine." Thus the belief in the direct contamination of air by breathing grew, involving the necessity of the constant removal and renewal of air. Nevertheless, so far back as 1842 Leblanc demonstrated that, no matter how crowded a room might be, the proportion of oxygen rarely fell to less than 20 per cent., and, on the other hand, Regnault and Reiset, only a few years later, showed that the proportion of oxygen could be reduced to 10 per cent. without increasing the rapidity of breathing. At the same time these and other authorities also demonstrated that air containing far more carbonic acid gas than could possibly be found in the most crowded rooms might be breathed without causing any inconvenience. Pettenkofer later on, in 1862, also insisted that it did not matter if the proportion of oxygen in the air was decreased and that of carbonic acid increased. But though he denied that there was any harm in even a large proportion of carbonic acid, its presence might become a good danger signal indicating that the atmosphere was likely to be infected. Many other authorities and experiments are mentioned in the Bulletin, all alike indicating how the belief that expired breath contained an organic poison was gradually abandoned. In 1883 Hermans, of the Amsterdam Institute of Hygiene, attributed the discomfort and rising temperature from which people suffer when crowded together in an ill-ventilated place not to poisonous atmosphere, but merely to the material difficulty caused by want of space. His simple explanation was that persons in a crowd had not enough air around them to keep their bodies cool, the radiation from the skin of heat and their evaporating perspiration maintaining an excess of temperature and humidity. He maintained that ventilation was a physical rather than a chemical problem.

Professor Haldane, of Oxford, conducted various experiments during 1905, in a specially constructed chamber, in certain tin mines and weaving mills. He insisted that it was the excess of dampness rather than of heat that was injurious. The same year Flügge, Heymann, Paul and Ercklentz made comparative investigations with sick and healthy subjects placed in a closed chamber. They did not suffer when exposed to an excess of carbonic acid gas or when deprived of the usual proportion of oxygen, nor from any volatile organic poison they might be supposed to expire from their lungs. But they did complain of the excess of heat, of humidity, and the stillness of the air. For 30 years experiments had been suggesting that neither carbonic acid nor some mysterious poison generated by the process of breathing was the cause of the evils which ventilation is expected to remedy, and at length the general observer turned to the physical rather than the chemical condition of the air as the thing which affects the individual. It became recognised that we need movement and change in the air we breathe just as we need exercise and variety in the food we eat. Dr. Leonard Hill has made some important investigations on these points. He has stated in our columns that the increased percentage of carbonic acid gas and diminution of oxygen which have been found to exist in badly ventilated enclosures are such that they can have no effect upon the incidence of respiratory disease and higher death-rate which statistical evidence has shown to exist among persons living in crowded and unventilated rooms. In his view it is the conditions of temperature, moisture, and stagnant atmosphere in such places which reduce the whole metabolism of the body to a lower plane.

It used to be said that the air of an inhabited room should not contain more than 0·06 per cent. of carbonic acid. It is now demonstrated that when the carbonic acid does not amount to 1 per cent. it does no harm. Not more than 0·4 per cent. is found in the most overcrowded public halls. As for oxygen we know that men can work and live vigorous healthy lives in the mountainous regions of the earth where the partial pressure of oxygen is only 17 per cent. of an atmosphere or less. Much too much attention has been devoted to the effect produced on the chemical composition of the atmosphere by breathing, whereas the trouble is caused by the exhalations, the dampness and the heat coming from the body, its effects on the clothes worn and the temperature of the air surrounding the body. What, therefore, is most important when inquiring if a place is properly ventilated is to mark the temperature and the degree of moisture. The proportion of carbonic acid, not important in itself, may also be noted as a witness of the quantity of fresh air supplied. If the result is not good it is not reasonable to at once condemn the system employed, whether it be some method of mechanical ventilation or natural ventilation depending merely on the opening of windows. Both these systems may work well or badly according to the way they are applied. In a commercial establishment at New York, for example, where 4000 persons are employed, the building was too hot. There was no fault to find in the system of heating and ventilation, but in its application. The flue that should have carried away the heat from a warming apparatus to a ventilating shaft was not in working order. Automatic recording thermometers should be employed, especially in hospitals, as the maintenance of the right temperature and degree of moisture is of the greatest importance to the patients. But to obtain this result there is no general rule that can be universally applied. Every building needs its special system according to its topographical position, the climate, the prevailing winds, and many other conditions that vary from place to place.

We are fairly safe in concluding that our powers of resistance will be much greater if we feel at ease and not over-exhausted physically. Our powers of resistance will be affected if a draught is so cold or violent as to make us feel chilly and uncomfortable. This is a very important phase of the question which, however, is not treated by the documents now published. It is generally easy to obtain a large supply of fresh air by throwing open a number of doors and windows; but how can the incoming current of air be so checked that it shall not travel at a greater velocity than 3 feet per second? It is a false argument to say that wind travels at a much greater rate and nothing is more healthy than outdoor life. But when the wind is blowing we seek out a sheltered place before sitting down. When moving we can tolerate and even enjoy what we cannot endure when sitting still. The demonstration made that the air of an ill-ventilated place is not poisonous has the practical result that it vindicates the use of the fan or the punkah. Where we cannot get efficient ventilation we may mitigate the evils arising by driving away the hot, damp air that surrounds us with a fan or a punkah. Formerly, while it was impossible to deny that this reduced our discomfort, we doubted that it would save our health, for it did not prevent our continuing to breathe over and over again the same air. To-day we are told that this does not matter; the quality of such air is not so seriously deteriorated as we used to believe. Therefore, and particularly as the summer heat increases, it is something to know that the fan, the electric fan, or the punkah serves a useful purpose.

THE LANCET.

LONDON: SATURDAY, JULY 3, 1915.

The Exchange of Medical Officers.

A QUESTION was recently asked in the House of Commons as to the existence of an agreement regarding the exchange of British and German military medical officers, and the answer, which was in the affirmative, has since been made effective, some delay having been caused by the necessity for determining exactly the members of the British and German military medical personnel who are entitled to be exchanged. Certain British doctors have now been restored to their country by exchange.

An explanation of the position is evidently required, judging by some of the comments upon it. By the Geneva Convention of 1864 it was agreed that ambulances and military hospitals should be acknowledged to be neutral, and as such protected and respected by belligerents as long as any sick or wounded were within them; also that the staff for medical service, administration, and transport employed in these hospitals and ambulances should participate in this neutrality. Amongst other points agreed upon it was allowed that a wounded man should be considered as a protection to the house in which he was cared for, exchanges of wounded were authorised, and the distinctive and uniform flag and *brassard*, of a red cross on white ground (the Swiss national flag being a white cross on red ground) were adopted. These obligations were confirmed by the Hague Convention of 1899. In 1906 a convention was again held at Geneva for the same purpose, in which additional and more precise stipulations were introduced. Amongst these it was laid down that a belligerent, compelled to abandon sick or wounded to the enemy, should, as far as military exigencies permit, leave with them a portion of his medical personnel and material; that for the protection of the sick and wounded the medical personnel may be armed, and may use its arms for defence; that the unit may be guarded by a piquet or sentinels; and that the weapons and cartridges taken from the wounded, and not yet handed over to the proper department, may remain in the hospital establishment. The ninth article specifically states that "the personnel engaged exclusively in the collection, transport, and treatment of the wounded and sick, as well as in the administration of medical units and establishments, and the chaplains attached to armies, shall be respected and protected under all circumstances. If they fall into the hands of the enemy they shall not be treated as prisoners of war." The International Convention on Laws and Customs of War held at the Hague in 1907 did not modify the conditions just enumerated. It has been therefore clearly agreed by the various powers signatory to these conventions that, in order that the sick and wounded may be properly cared for (which is presumably the desire, and certainly to the interest, of all civilised combatants), the medical establishments and personnel are to be protected and respected by the belligerent forces. Now it must happen, in the course of military operations, with an advance in one direction, a retirement in another, a rapid evolution undertaken for some tactical object, and necessarily in the case of an actual retreat, that wounded men and the medical officers and attendants engaged in their proper work of first aid, or performing the urgent operations of field surgery, do from time to time fall into the hands of the enemy. No one would undertake a surgical operation in the field unless it were absolutely necessary in order to save life, but such a necessity does at times occur; and even such comparatively slight surgical assistance as is constantly called for may lead to the wounded man and the surgeon being left behind by their comrades. With a savage foe their fate is not doubtful; but with a civilised opponent the medical personnel attending on the wounded, though falling into the hands of enemy, are not only not attacked, but are to be protected and respected, and are not to be held as prisoners of war. They may certainly be killed or wounded accidentally, but they are protected from deliberate attack. This is to the interest of both combatants. The army surgeon, when able to do so, attends to the wounded not only of his own side, but of the enemy also. Naturally he attends to his own comrades first, but he does not leave an enemy uncared for, if helpless and in extremity and no medical aid from the enemy's side is available. So that the surgeon, though by no means a neutral, is to be respected as regards his safety, and prized for his great value, by both sides.

In this connexion we may quote the opinions of two of the greatest commanders of modern times on the army doctors whom they had most to do with. NAPOLEON always had LARREY by his side, and said of him that "he was the most virtuous man he had ever known." WELLINGTON said of MCGRIGOR that he was "one of the most industrious, able, and successful public servants that he had ever met with." Lastly, to quote an earlier, but never out-of-date, opinion as to the value of the army surgeon, HOMER, referring to MACHAON, says:—

> Worth many a life is his,
> The skilful leech who knows, with practised hand,
> To extract the shaft and healing drugs apply.

We have no doubt that the commanders on both sides are fully alive to the value of their medical officers at the present time. Never have they been more necessary; never have they been so efficient; and always *in arduis fideles*.

The Link of Medicine.

WE announce in another column the arrival in England from the United States of a complete medico-military unit, known as the Chicago Unit, comprising the full medical and nursing organisation for a general hospital of 1040 beds. The establishment consists of 32 medical men (physicians, surgeons, specialists, a radiographer, and a pathologist) and a nursing staff of 75 women, including the matron. The unit has been recognised by the War Office. Every one of our readers will admit with gratitude the practical sympathy of a splendid sort which is thus displayed by the United States, while we understand that similar units may be expected to arrive from America, taking their departure from other great cities, and animated with the same quick and deep desire to minimise as far as possible the horrors of war. From a private communication which we have received from one of the staff of the Chicago Unit it is easy to guess that there will be no dearth of applicants in other American centres for what will necessarily be very hard and perhaps dangerous work. The medical men and nurses of the Chicago Unit were selected from several hundreds of applicants, every man's post could have been filled at least six or seven times, and a brisk competition prevailed among candidates for the nursing staff. The same rivalry will hold good elsewhere. And here we may add that a generous citizen of Chicago has personally offered to meet the large difference in pay between the salaries of military nurses in the British Army and the salaries of nurses in the United States, where, as is well known, skilled assistance of every kind is rated at a higher figure than prevails with us in this country. We are certain that the American nurses did not need money as an incentive, but it is equally certain that some of the most experienced of them could not have undertaken to volunteer unless the pecuniary footing of their employment had been made sure.

Medicine is here proving itself a real link between nations. When we get down to the simple fact of a man in pain, in sickness, and perchance in peril of his life, the differences that exist between one country or state and another, arising out of political conventions, trading regulations, unhealed quarrels, or injudicious speeches, may, we see, disappear altogether, and the action of the United States displays this medical spirit splendidly. We must not forget that the war is practically a world war, and that its results now give rise to very serious mental and material trouble to the United States, the only first-class Power still remaining neutral. While the greater part of the inhabitants of the United States, though maintaining political neutrality, are known to see eye to eye with the Allies in the rights of the quarrel, there is still a section among them who hold a different view, and who make the satisfaction that comes from complete unanimity very hard to obtain. Again, the trade of America is embarrassed and her financial position is complicated in many directions by a struggle in whose origin she at any rate had no part. Because of all this the European war is a subject of painful anxiety on the part of the inhabitants of the United States, and their action in helping our armies in the field by providing hospitals in accordance with the recognised military pattern, to be placed under the control of the War Office, is one for which we must be very grateful. Nor must we forget to express appreciation of the fact that among the American surgeons and physicians who have come to the help of our sick and wounded are some who have left lucrative practices and important positions on hospital staffs or in connexion with universities in order to lend their aid in the hour of need. This alone would show that the medical impulse is at the bottom of their action; the citizens of the United States are not taking sides so much with the Allies against the Germans as with the sufferers against the triple alliance of disease, privation, and injury.

Forty-five years ago, during the brief and terrible Franco-German War, the neutrality of this country was accompanied with energetic attempts on our part to help the sick and wounded victims of political aggrandisement and military ambition. We did a great deal in this way; many people worked very hard and much money was given and much saving of live and relief of pain were effected, but the comparative smallness of what then seemed to be the greatest war that man could conceive of is forcibly brought home to us when we look now at the preparations that have to be made to meet the demands of the casualty lists. All that we did in 1870 would hardly have met the requirements of one week of the present war, already eleven months in the waging. Where we then thought in hundreds we have to think now in tens of thousands, and while the amount of skilled hospital assistance already at our disposal on the Western Front alone is beyond imagination huge, we know only too well that more already is required and that much more will have to be found. It is therefore with genuine gratitude to the citizens of the United States that we welcome the organised assistance which they are now adding to their previous generosity.

LITERARY INTELLIGENCE.—Mr. Henry Kimpton announces the following new books: "Surgery of the Blood Vessels," by Dr. J. Shelton Horsley, of St. Elizabeth's Hospital, Richmond, Va.; and "Operative Gynecology," by Dr. Harry Sturgeon Crossen, Associate in Gynecology, Washington University Medical School.

CENTENARIANS.—Miss Emily Bond, of Exeter, celebrated the 100th anniversary of her birthday on June 23rd, and was the recipient of a congratulatory telegram from the King.—Mrs. Mary Mitchell, of Old Brompton, Chatham, who is a widow and is the granddaughter of a centenarian who died at the age of 103, has just celebrated the 100th anniversary of her birthday.

Annotations.

"Ne quid nimis."

THE INCREASE OF ILLEGITIMACY: THE REPORT OF MRS. CREIGHTON'S COMMITTEE.

THE committee convened in April by Mrs. Creighton in consultation with the National Union of Women Workers has investigated and has found no truth in the allegations made to the effect that an extraordinary increase in the number of illegitimate births was to be expected in the neighbourhood of our military camps, and throughout the country, owing to the immorality of our newly recruited army and the number of young girls seduced by soldiers. The accusation, recklessly made, was, indeed, absurd upon the face of it, but it gained ground so rapidly and became so exaggerated that it was actually proposed by some that alteration of the marriage laws of the country would be a suitable means for avoiding a widespread stain of illegitimacy about to rest upon the next generation. The absurdity lay in the fact that the statements made were circulated at so early a date that even if statistics were ever likely to be available none could possibly have been compiled. Those, however, who assumed that the number of women affected was large enough to demand legislative interference in their interests did not seek to inquire how the figures thus freely cited had been arrived at. They perhaps forgot that, although we are familiar with the notification of births, the compulsory notification of pregnancy (with prenatal proof of paternity) has not yet been enacted, and even if introduced would be exceedingly difficult to enforce. Nothing, however, short of it could have afforded anything like justification for the enlarging of the lying-in wards of infirmaries, which the committee found to be one of the rumours prevalent, or for assertions made that the number of the illegitimate births expected in various districts ranged from 100 to 1000. Investigation, made as thoroughly as the nature of its subject would permit, has now shown that the fears expressed were groundless. In military and other districts, and in a great number of towns throughout the country, every authority able to furnish trustworthy information has been consulted, and various agencies likely to be able to elicit information have been employed. As a result the committee has found that the reports circulated were without foundation, although there have been "giddiness and foolish excitability among the young girls leading often to most undesirable conduct," and "that the way in which the subject has been treated in many quarters is likely to do incalculable harm." So the "war baby" fiction perishes stillborn, its subject does not exist, and we may hope that the catch phrase invented by someone to meet the supposed occasion will soon be forgotten also. Even the committee, though protesting against the objectionable term "war baby," has found itself obliged for convenience' sake to make use of it in compiling its report. It has in itself done obvious mischief by introducing a spirit of levity into the public treatment of what, with all due allowance for its absurdity, amounted to a serious slander upon our young folk of both sexes.

SCIENTIFIC FOOD ECONOMIES.

A GOOD many, if not the majority of, people are well advised to eat somewhat less than they do in general, for as a rule the daily intake is considerably in excess of real needs, at all events amongst people with means. Just now there are cogent reasons for following such advice apart from questions of physiological profligacy. Physiological thrift, of course, means, besides lightening the labour of the metabolic processes, the economising of our food-supplies. There is no doubt that a good deal could be done in this direction by giving serious consideration to reducing the daily amount of food. Excesses are easily enough pointed out, and it is chiefly the force of habit which makes it hard to avoid them. The custom, for example, of eating cheese after a meat meal consisting of, say, a chop or a steak, is pure physiological extravagance. The protein intake of meat is quite enough without recourse to more nitrogen in the form of cheese. Conversely, the cheese supplies a nitrogen intake equal to the meat. Similarly, in a curried dish with an abundant supply of rice the potato might well be left out, as it would supply a superfluous amount of carbohydrate. Meat, again, served with haricot beans presents a highly loaded protein diet. The meat could be saved for another dish and the beans eaten with the gravy. Instances of this kind could be easily multiplied, but enough has been said to illustrate how a quite important economy as regards cost can be effected without loss of materials essential to repair the human machine, and to keep up its energies. Variety of diet is, of course, desirable, but a tactful menu is easily possible, varying the source of the several food elements in the way suggested.

THE EFFECT OF BENZOL ON THE BLOOD PLATELETS.

THE recent introduction of benzol as a therapeutic agent in the treatment of Hodgkin's disease lends interest to a case reported in *Pathologica* by Dr. V. Ronchetti, of Milan, in which he draws attention to the effect produced by the drug on the platelets as well as the other constituents of the blood. Before treatment the number of leucocytes was 11,500 and the platelets normal in amount. For 22 days 2·5 grm. of benzol were given daily; after an interval of four days 3·5 grm. were given daily for 12 days. Thus about 100 grm. were given in 38 days, and at the end of this period the leucocytes had diminished to 4687, while the platelets were very few. The administration of benzol was then omitted owing to symptoms of intolerance, but ten days later an examination of the blood showed that the leucocytes had diminished to the remarkably low figure of 260 per cubic millimetre, while the platelets were entirely absent. Subsequently the number of leucocytes gradually increased, reaching the figure of 843, while the platelets again became numerous. It must be admitted that in this case the benzol exercised an inhibitory influence on the functional activity of the hæmatopoietic organs, and the decrease in platelets seems to contradict the theory that they are derived from the destruction of leucocytes. Dr. Ronchetti is of opinion that in his case either the diminution of platelets was the direct consequence of the leucopenia or that the hæmatopoietic organs paralysed in their productive activity by benzol could form neither fresh platelets nor fresh

leucocytes. The second hypothesis seems to him the more probable from the fact that the sudden disappearance of platelets was simultaneous with the sudden onset of leucopenia without being preceded by a transitional period of increase in platelets. This question needs further investigation, but the author has called attention to an interesting fact that in the course of treatment by benzol marked changes occur in the platelets as well as in the leucocytes, changes which should stimulate the inquiry whether, on the appearance of symptoms of intolerance from the drug, diminution in the number of platelets precedes or follows or is simultaneous with the leucopenia.

PERFORATION OF THE STOMACH AND INTESTINE BY FOREIGN BODIES THAT HAVE BEEN SWALLOWED.

Dr. F. S. Watson has contributed to the *Boston Medical and Surgical Journal* an important paper on perforation of the stomach and intestine by foreign bodies that have been swallowed, of which he has observed six cases. The bodies were a wooden toothpick, a needle such as is used for sewing canvas, a fish bone, a bristle, a flat thin piece of bone with sharp edges, and a body of unknown nature about half an inch long with the shape of a piece of lead pencil. The sites of perforation were found in three cases—the upper part of the jejunum, the small intestine near the ileo-cæcal valve, and the middle of the transverse colon. In two cases they were presumably high in the intestinal tract or in the stomach, and in one in the ileum near the ileo-cæcal valve. In all but one case the pathological condition was circumscribed peritonitis, which in three cases formed an abscess. In one the abscess had approached the surface of the abdomen. In a case of perforation of the duodenum with abscess the opening was large enough to admit the tip of the little finger, and fæcal extravasation was taking place into the abscess. In the case of perforation of the transverse colon by a bristle the condition presented was remarkable. A tumour about the size of the palm projected above the surface of the abdomen at the level of the umbilicus and extended downwards towards the symphysis pubis. It represented an enormously thickened left rectus abdominis intimately attached to the parietal peritoneum. Immediately beneath was a mass formed by thickened omentum. Beneath this mass was a second one, the lower border of which reached the level of the brim of the pelvis and extended towards the spine posteriorly. It was an intra-abdominal abscess containing about 12 oz. of pus and the foreign body. The three parts described were welded into one mass which gave the impression of a large intra-abdominal tumour. Fæcal extravasation was prevented by the firm glueing down of the omentum around the perforation. In not one of the cases was the diagnosis correct as to the cause, which is explained by the fact that the patients never gave the information that a foreign body had been swallowed. In two cases intra-abdominal abscess was correctly diagnosed, but its origin was obscure. In two cases of perforation near the ileo-cæcal valve the symptoms were typical of subacute appendicitis. In the case of perforation of the jejunum the picture presented was that of acute and severe peritonitis, and despite the absence of previous symptoms perforating ulcer of the duodenum was suspected. In the case of perforation of the transverse colon by a bristle the patient noticed only a tumour in the left upper quadrant of the abdomen, which painlessly enlarged until it attained the size of the closed fist. It was closely attached at its base to the left rectus and felt like a sarcoma of the abdominal wall, which diagnosis was made by two of Dr. Watson's colleagues. Its duration was two months. A small incision was made into the tumour to remove a bit to send to a pathologist for a rapid diagnosis. This fortunately exposed the tip of the bristle. The mass of inflammatory tissue was cut off at the base and the wound closed. It is impossible to determine the proportion of cases in which perforation of foreign bodies which have been swallowed occurs, because of the unpublished number in which they pass through the alimentary tract without injury. In the reported cases perforation has occurred in about 8 per cent. As a rule foreign bodies remain longer in the stomach than in the intestine, and the longer the body the more likely is it to be retained in the stomach. The character of the foreign bodies which have passed through the alimentary tract without serious injury is extraordinary. They include pocket knives, safety pins, open and closed, table knives, spoons, forks, and fish-hooks. On the other hand, less formidable bodies have caused perforation, sometimes fatal. It is noteworthy that perforation has sometimes taken place after the passage of the foreign body, seemingly without injury, in consequence of ulceration.

THE TREATMENT OF INSURED PERSONS SUFFERING FROM TUBERCULOSIS.

Dr. H. A. Ellis, the tuberculosis medical officer and medical adviser to the Middlesbrough Insurance Committee, has recently issued a report as to the treatment of insured persons suffering from tuberculosis, which draws attention to a side of the problem which has been but comparatively little discussed—namely, the coördination between the number of patients affected and the financial position. In considering the number involved, Dr. Ellis shows that the proportional number of reported cases is steadily increasing, and will continue to increase, if the Act is satisfactorily worked. His figures further show that many cases are not reported until the last stage. The reason he gives for this condition of affairs is probably correct—namely, that patients are unwilling to recognise that they are suffering from pulmonary tuberculosis in its early stage, and postpone seeking medical advice until the disease is so far advanced that the chances of arrest are considerably diminished. By this course they not only do irretrievable harm to themselves, but they also become a danger to other members of the population. Dr. Ellis emphasises the vast value of early recognition and treatment. It is justly expected that by the examination of "contacts" a certain number of individuals will be diagnosed as suffering from pulmonary tuberculosis at an early stage when treatment is most likely to be successful. Turning to the consideration of the financial position, Dr. Ellis proves that in his district, at any rate, sufficient funds are not available. He showed that in the first year (1913) there were very few cases, and a considerable sum was carried forward to the next year; in the following year (1914), a lesser sum was carried forward, but this year he estimates that there will be no

balance to the good, and possibly a deficit. He then very properly asks how the limited money available can be best expended. We agree with his decision that the favourable early cases should be first considered, as a large proportion here can be restored to a good working capacity. This means that the advanced cases will suffer and some measures of segregation will have to be adopted by which they can be relieved and prevented from spreading infection. This question is receiving due attention, but time will be required before satisfactory provision can be made for the unfortunate sufferers in the advanced stages of pulmonary tuberculosis. Dr. Ellis's report forms an example which other tuberculosis medical officers might well follow.

THE DE NOVO ORIGIN OF LIVING ORGANISMS.

THE recently published number of the Proceedings of the Royal Society of Medicine contains an illustrated communication from Dr. H. Charlton Bastian, F.R.S., entitled "The Importance of Tyrosine as an Aid in the Demonstration of the Present-day *de novo* Origin of Living Organisms," in which he deals with the effects produced by small quantities of a dilute solution of this synthetic compound when sterilised and added, with all necessary precautions, to tubes containing saline solutions of five different kinds (whose composition is given) which 5–10 months previously had been enclosed in hermetically sealed tubes and then sterilised by boiling for 20 minutes on three successive days. Tyrosine is one of the most powerful of the auxetics whose influence in producing multiplication of cells and of minute amœbæ has been noted by some of the workers for the McFadden Research Fund. It was recommended to Dr. Bastian for use in two ways: firstly, as an addition to tubes whose contents were ripe for examination; and, secondly, as an addition to the original saline solutions previous to their enclosure within the tubes, in the hope of thereby possibly shortening the long period of probation generally needed before recognisable living organisms could be found within the tubes. The first mode of testing its influence was carried out on a large number of tubes ripe for examination by adding a few drops of the freshly sterilised tyrosine solution to each tube when it was opened. The tubes were then immediately reclosed and replaced in the incubator for three to four weeks. When the contents of these tubes were re-examined after such an interval a very considerable growth and multiplication of organisms was found to have taken place—thus tending, Dr. Bastian maintains, to disprove the two principal objections which had been urged against the original experiments—namely, (1) that what were found were simulacra or pseudo-organisms; or, as others believed, (2) were dead organisms pre-existing in the solutions. In order to test the second possible influence of tyrosine similar small quantities of the solution were added to a large number of tubes containing some of the same five sets of solutions, freshly prepared, with which other tubes were charged, sealed, and sterilised. After these tubes had been in the incubator three to four months many of them were examined, but no organisms could be found, and the small deposits were also more or less altered in character. This initial use of the tyrosine, far from acting as it was hoped, seems therefore to have been actually injurious and to prevent the formation of organisms. But the same materials were used in the preparation of the solutions, the tubes were treated in the same way, and their contents were examined in the same manner, so that objections urged by previous critics of Dr. Bastian's work must be, he considers, invalidated. The argument is that the absence of organisms now tended strongly to show that the organisms found in the first series were not likely to have come "from an impure pipette or to have dropped from the atmosphere on to the microscope slip before the cover-glass had been applied," these being the surmises hitherto adduced by critics.

THE PREVENTION OF KELOID IN SCARS.

KELOID in scars may often be a distressing feature, more especially when situated in prominent and visible regions of the body. The hypertrophy of the scar tissue seems to be mainly due to tension upon the scar, and it is seen in connexion with longitudinal rather than with cross incisions. This hypertrophy is especially prone to occur in tuberculous patients, and hence disfiguring scars often follow operations upon tuberculous glands in the neck. It has been suggested that such conditions may be removed or prevented by underlining the incision with strips of fascia lata, and Dr. Leonard Freeman reports in the May issue of *Annals of Surgery* successful results in two cases. In one case a lady had a long and ugly keloid scar in the neck, following an operation for tuberculous glands. It extended from the mastoid to the centre of the clavicle and was as wide and thick as one's thumb. It was fiery red in colour. Excision of keloid is known to be always followed by recurrence, so that the following operation was performed. From the thigh a strip of fascia lata was removed long enough to reach the length of the scar. After thoroughly extirpating the scar and undermining the edges of the wound, the strip was spread lengthways beneath the incision. It was then fastened to the under surface of the skin and fascia on one side, and to the deeper tissues on the other side, with a few sutures of fine catgut, thus permitting the union above it of the integument and cervical fascia without danger of displacement. The result was as follows. In 12 months' time, when an attempt was made to incline the head to the opposite side, the movement was checked by the strip of fascia lata, which could be seen beneath the skin. But an even greater check than this had previously existed. There was no pull on the new scar, which was soft and freely movable on the surface of the underlying graft. The new scar was relatively inconspicuous and "normal." In a second case of similar nature, at the end of four months, similar treatment had resulted satisfactorily. It is held that whilst this method is of value with false keloid, it is not likely that it will be of much use in true keloid.

ABDOMINAL HYSTERECTOMY FOR CARCINOMA OF THE UTERUS.

SERIES of cases operated on for carcinoma of the cervix uteri with their after-histories have been published on numerous occasions. Several such series taken together are of value, as they form a collection of a large number of cases operated on by surgeons of varying skill and experience from which the probable mortality, morbidity, and after-result of the particular operation may be judged. We draw attention to a valuable contribution which

Dr. Maurer made to the *Revue de Gynécologie et de Chirurgie Abdominale* in August, 1914, because it did not apparently attract the attention which it deserved. It was of peculiar interest, although it deals with only 60 cases, because these 60 include all cases of the sort operated on in the Hôpital Broca between 1905 and 1913. Also the series in question comprises not the personal results of one man but the united results of operations by M. Pozzi, M. Proust, M. Bender, M. Dartigues, and M. Rouhier, and during the period from which the series has been taken the operation has varied from a simple abdominal hysterectomy to an extended pelvic dissection with routine ligature of the internal iliac arteries. Maurer gives detailed analyses of the 60 cases, which fall into two groups of 30 simple and 30 extended abdominal hysterectomies. The latter include 8 in which Proust tied off both internal iliac arteries. Seeing that more advanced cases have been undertaken since the introduction of the more extended pelvic dissection than was possible with the more simple form of hysterectomy, it is of interest to note that the extended operation has a mortality only very little higher than the less complete one. The actual figures given show that with the simpler panhysterectomy 8 cases out of 30 died; with the extended pelvic dissection, 9 out of 30. Of the 8 cases in which bilateral ligature of the iliac arteries was performed as a routine only 1 died, and that patient had a very advanced growth which involved the bladder and required resection of a portion of the latter. Maurer gives the after-results in tabular form and also the clinical history of every one of the 60 cases. The paper is of considerable interest, and it is to be hoped that a similar article will be published after another eight years. It is unfortunate that only 25 of the 43 patients who survived the operation could be followed up to obtain an after-history regarding the presence or absence of recurrence.

X RAYS, VISCERAL PTOSIS, AND ITS TREATMENT.

A SERIES of unusually interesting abdominal cases has been described by Dr. A. F. Hertz in the Proceedings of the Royal Society of Medicine (Electro-Therapeutical Section), May, 1915, p. 70. Interest attaches not only to the evidence of the extent to which visceral displacement may occur and cause symptoms, but also to the methods and results of treatment employed. One case was of gastroptosis in an unmarried woman aged 52. She suffered from constipation, indigestion, and weakness. The tone of the stomach, as seen by X rays, was normal, but the organ reached much below the level of the umbilicus. Treatment consisted of abdominal support, regular massage, and exercises. In 14 months the position of the stomach had risen to normal. She was also able to do without aperients except for an occasional dose of paraffin. Four months later, after discarding the abdominal support, the stomach had actually become slightly hypertonic, and now no aperient at all was necessary. In another case (Case 9) an atonic dilated stomach (with no ptosis) became again normal with treatment consisting of rest in bed, absolutely dry diet with all fluids given per rectum, and abdominal massage. Case 11 was of ptosis of the colon with severe intestinal stasis in a girl aged 14. Constipated since infancy, she had had five attacks of fæcal obstruction. There was perpetual headache; the breath was foul and tongue furred. X rays showed an extreme degree of stasis throughout the whole colon. The transverse colon was low, even when lying horizontal. No other viscera were displaced. Treatment proved most satisfactory. She was kept in bed for five weeks. Each morning she was given abdominal massage directed to the colon by a nurse. A tablespoonful of liquid paraffin after each meal and a warm water enema every morning were given Full diet with extra milk and cream. In six weeks the weight had increased from 7 st. 12 lb. to 9 st. 7 lb., and she felt better than ever before. During the last fortnight the bowels were opened naturally each morning. The enemata were reduced in bulk and finally discontinued. X rays showed that there was no longer any ileal or colic stasis, and the transverse colon had risen to its normal position. Four months later improvement was still maintained. Case 12 was of dyspnœa due to ptosis of the diaphragm with general visceroptosis. Whilst in the horizontal position the diaphragmatic excursion was 2½ inches: when upright only ¼ inch, and the diaphragm assumed the position of extreme inspiration. With abdominal support the normal respiratory excursion became possible and the dyspnœa disappeared. Examples of this nature are very satisfactory from the therapeutic point of view and also demonstrate the great value of the X rays.

THE PROGRESS OF MEDICINE IN CHINA.

THE rapid advance recently made in the progress of medicine in China has been strikingly illustrated at the triennial meeting of the Chinese Medical Missionary Association held at Shanghai. The association has nearly 500 members, whilst many Western-trained Chinese and "foreign" practitioners are in relation with it. Work done by the association includes the organisation of a pure drug-supply, a campaign against tuberculosis (which is said to account for 2,000,000 deaths annually in China), investigations into the distribution of intestinal parasites, and the study of Chinese forms of malaria, and the bacteriology of tropical ulcer. The modern treatment of cholera and dysentery has also been tested and reported on. The association is seeking to promote, through its missionary societies, the further development of medical schools for the Chinese, already carried on with excellent results at Peking and elsewhere in the Empire. It is also translating medical and surgical text-books, and for this purpose is producing a medical terminology in Chinese—a task of peculiar difficulty.

PERNICIOUS ANÆMIA AND ITS NEUROPATHOLOGY.

IT is known that some nervous symptoms are by no means infrequent in pernicious anæmia. Tingling in the hands and feet is not uncommon, and sometimes there are various pains in the arms, shoulders, legs, or back. Physical examination has shown in some cases a loss of knee-jerk or exaggeration, and occasionally an extensor plantar response. The pathological changes in the spinal cord have on these accounts been carefully examined, and in many cases definite changes have been found. It is usual to find a patchy, irregular degeneration and sclerosis in the posterior columns and also in the lateral tracts. It is important to note also that in those cases in which psychical changes have been observed during life there are similar changes in the cortical neurons. These changes are said by Dr. J. A. F. Pfeiffer

(*Journal of Nervous and Mental Diseases*, February, 1915) to be similar to those in psychoses of toxæmic origin. This view is significant since many theories have been offered to explain the nervous changes. It was suggested, in the first place, that the sclerosis was due to a coalescence of multiple small hæmorrhages; but these are often not found in cases in which they would be expected, nor is their distribution compatible with such a possibility. Secondly, it was thought that thickening of the blood-vessels might induce secondary changes in the nerve tissue, but sclerotic areas are found independent of the blood-vessels. Thirdly, thrombosis of smaller vessels was suggested, but the distribution of the degeneration in pernicious anæmia favours the cervical and upper thoracic regions of the cord, whereas the most deficient vascular supply, and thus the most likely zone for thrombosis to occur in, is in the mid-dorsal, lumbar, and even the sacral regions. Finally, in many cases the vascular changes have been found to be relatively insignificant, and could not be regarded as bearing any etiological significance to the degeneration in the spinal cord. It has been noted that the lymphatic spaces of the vessels may be distended and filled with the detritus of the products of degeneration, but this is to be regarded as merely their participation in the disposition of waste products. A common toxin must be regarded as the cause of all the changes, and this acts simultaneously upon both grey and white matter. The distribution of the chief degenerative areas is due to the fact that all parts of the nervous system are not equally vulnerable. This toxic theory of the changes in pernicious anæmia finds support from the evidence that combined tract degeneration has been observed in a number of toxic, cachectic, or anæmic conditions, such as leukæmia, arsenic poisoning, and chronic alcoholism.

THE MORTALITY AFTER PROSTATECTOMY.

Dr. B. Tenney and Dr. H. M. Chase have collected details regarding 229 cases of prostatectomy which proved fatal, and discuss their findings in the *American Journal of Urology* (vol. xi., p. 203). It is significant that the most frequent cause of death is uræmia. This occurred in 30 per cent. of instances. This condition, it is pointed out, probably covers also many of the accidents of embolism and also pulmonary complications. Hæmorrhage, sepsis, and shock are also frequent causes of death. The relation of mortality to age (based upon 816 cases) shows an increasing percentage with increasing age. Thus, ages 50–59, 5·8 per cent.; 60–69, 9·5 per cent.; 70–79, 15 to 33 per cent.; and over 80, 50 per cent. In 100 cases the relation of mortality to the preceding length of urinary obstruction was noted. It was found that a larger proportion of instances of uræmia, sepsis, and embolism occurred in patients in whom the signs of obstruction had only been present under 12 months, suggesting that patients with impaired general health seek relief at an earlier period. There appears to be some evidence in favour of careful preparation of the patient before operation. When this had been done for a period of from 8 to 14 days the mortality from uræmia, for example, was 21 per cent.; when this period was under two days the deaths were 37 per cent. of the total fatal cases in which this evidence was forthcoming. The effect of preliminary drainage in 46 cases (36 by catheter, 10 by cystotomy) showed that this procedure did not alter the relative incidence of the various causes of death. It is significant that the mortality is distinctly lessened when the evidence gained from a functional examination of the kidneys has been inspected. In 26 cases the phenolphthalein test was used together with, in two instances, the urea percentage, and in these instances the percentage of deaths from uræmia was only 19, as compared to the figure 30 in the general run of cases not thus examined. The conclusions are offered that, following upon the operation of prostatectomy, uræmia is the greatest danger; that this danger can best be guarded against by a previous functional examination and by observing as long a period of preliminary preparation as possible.

WORK AT THE MARCUS BECK LABORATORY.

AT the Marcus Beck Laboratory of the Royal Society of Medicine an interesting research is now being undertaken into the nature of measles. The research is being conducted for the National Medical Research Committee, and Sir Ronald Ross, the honorary director of the laboratory, with a full knowledge of the difficulties surrounding what must be a very long and intricate piece of work, is appealing for the assistance of medical practitioners, especially those in the neighbourhood of the laboratory at 1, Wimpole-street, London, W. Any practitioner who is treating a case of measles near at hand would greatly facilitate the work by arranging for permission to take specimens of fresh finger blood from the patients, and full directions how this should be done can be obtained from the laboratory. Notifications of the names and addresses of patients can be telephoned to the hall porter of the society at any time by night or day, and it is hoped that response will be promptly forthcoming, as it is especially desirable that the blood for examination should come from cases situated within a short distance of the society's house. The Honorary Director of the laboratory would also be glad if Fellows and members of sections would be so kind as to inform him whether they have ever observed that small-pox vaccinations are exceptionally unsuccessful if performed on persons who are suffering from, or have recently suffered from, measles of either type or from scarlet fever.

Information is also desired from any persons having special knowledge of the Gallipoli Peninsula and neighbouring parts, as Sir Ronald Ross intends to make an investigation on the sanitation of the district.

ALEXANDRA DAY RECEIPTS.—The receipts of the Alexandra Day collection in London amounted this year to over £26,000, nearly £5000 in advance of last year.

FREEDOM OF PETERBOROUGH FOR DR. T. J. WALKER.—At a meeting of the Peterborough city council on June 18th it was decided that the freedom of the city should be offered to Dr. T. J. Walker on his attaining the age of 80, a date now only six weeks distant. Dr. Walker, who is consulting surgeon to the Peterborough Hospital and Dispensary, has always interested himself in all that concerns the growth and welfare of Peterborough, and on more than one occasion has been offered the mayoral chair. For many years he has been known as one of the most distinguished provincial surgeons. He wrote the article on the larynx in Quain's Dictionary of Medicine, is a past Vice-President of the Larygological Society of London, and in the early days of antiseptic surgery did valuable pioneer work.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Therapeutics of Wounds in Warfare.

AT two successive meetings of the Académie de Médecine this question has been discussed. M. Pierre Delbet does not use iodoform. But ether, according to him, as also silver nitrate 1 in 1000, does not modify more favourably than iodoform the vitality of microbes. A deodorising action is obtained by lactose, and that is all. Oxygenated water in lavages exercises no favourable effect upon microbic flora. Against gaseous gangrene the effect is nil. If injected in the cellular tissue injurious effects may result. Experimentally animals where oxygenated water is injected are cured with greater difficulty. The infection is proportional to the strength of oxygenation of the water. If the wounded recover it is not thanks to, but in spite of, the oxygenated water. One aims, says Dr. Delbet, at the microbes and kills the cells. The first quality of a lavage fluid is that it should be innocuous. Professor Pozzi protested against these views. In his opinion asepsis ought to be used when normal tissues are in question and antisepsis in the treatment of infected wounds. Further, Professor Pozzi declared that oxygenated water and iodoform, in contradiction to what had been asserted, appeared to him to be among the best antiseptics, and it would be a great mistake to banish them from surgery.

The Re-education of Movement in the Wounded.

M. Kouindjy has shown that motor re-education gives excellent results in the treatment of the sequelæ of wounds in warfare. It consists especially in teaching the wounded how to walk and to move advantageously the upper limbs. The re-education of movements holds a preponderant place in the education of the cripple by the re-education of accessory muscles. Some observations cited by M. Kouindjy have shown that the accessory muscles intervene in the execution of movements when the direct muscles are completely paralysed. This makes it possible to obtain in those crippled by war a skilful execution of vital movements. As a result of re-education the use of orthopædic apparatus is notably diminished.

The Treatment of Typhoid and Paratyphoid Cases.

It is known that cases of paratyphoid fever are at the present time extremely frequent—more numerous even in certain regions than those of true typhoid from Eberth's bacillus, and that, on the other hand, it has been shown, especially by vaccination and by serum diagnosis, that these two affections are absolutely distinct and in no sense immunise the one against the other. M. Jeanselme and M. Agasse Lafont have recently had occasion to observe a case of the successive infections, at first by paratyphoid B, then by the bacillus of Eberth. This raises an important problem in prophylaxis. Their patient, a soldier from the front, was sent to the Hôpital Militaire du Panthéon, where the serum diagnosis having shown that he was affected with paratyphoid B, he was put in an isolation ward in which, however, typhoid and paratyphoid patients were mixed. The affection followed its normal course, when it appeared to have a first, and subsequently a second, recurrence. The idea thus came about that the case was one perhaps not of recurrence but of a new infection, and, in short, serum diagnosis with the bacillus of Eberth, which had been negative during the first attack, in this attack was found distinctly positive. In all cases in which the laboratory is called on to determine between true typhoid and paratyphoid fevers the necessary precautions should be taken to separate these two groups of continued fever.

Epileptic Crises following on Explosion of Projectiles without any External Wounds.

At the medical reunion of the 6th Army M. Georges Guillon showed patients who, consequent on the explosion of shells and mines, had suffered from persistent epileptic crises. One of these patients was with three other soldiers when a shell burst in the middle of them, killing the other three. The patient himself was not touched, but got up and walked. An hour later he had a first epileptic attack, the next day three others, and since that time, six weeks ago, he had had three or four similar attacks every day. These attacks are typical epileptic crises with sudden onset, tonic and clonic convulsions, loss of consciousness, and subsequent amnesia. The examination of the nervous system shows no apparent trouble of the motor or sensory functions or of the reflexes. Lumbar puncture gave vent to a clear cerebro-spinal fluid, not over-tense, not over-albuminous, and without any cellular element. In another case, that of a Zouave, a mine exploded in a trench of the first line. The next day the patient had a first attack of epilepsy in all respects like the fits in the preceding case, and since that time every day several similar attacks. Lumbar puncture showed slight lymphocytosis. These epileptic crises supervening on the explosion of mines or of shells without any external wound depend upon organic lesions of the neural axes. It is probable that the bursting of the explosives determines small cortical or central hæmorrhages, similar lesions of the circulatory, and lymphatic troubles of the nervous system. It is not a question in any way of dealing with neurotic phenomena, as certain authors have suggested. It seems, moreover, that the lesions of the neural axes in certain cases are to some degree reparable, and that the ultimate prognosis may become more favourable.

Sanitary Trains.

The Superior Consultative Commission of the Service de Santé has already pointed out the great progress realised in the transport service of the wounded by rail. At one of its last sessions this same commission, following on a new investigation that it had made into the question, congratulated the railway services on the organisation of the sanitary train and the speed with which evacuation of the wounded by rail is effected. The War Office has now associated itself with the compliment to the commission and, in transmitting to the great companies the thanks of the commission, it has joined thereto its thanks for the devoted coöperation that railways have lent to the military authorities.

June 28th.

NEW HOSPITAL FOR WOMEN, EUSTON-ROAD.—This institution celebrated its twenty-fifth anniversary on June 22nd, when Lady Plender, president of the house committee, received a large number of guests, who afterwards visited the different wards and departments. The present buildings were occupied in 1890, but the hospital itself dates back to 1872. It is the first hospital to be staffed entirely by women.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE CENTRAL COMMITTEE.

A MEETING of the Central Committee was held on Thursday, June 24th, when the further details of the proceedings of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés were discussed. The last séance of the Belgian Committee of which details had been received was the *séance* of April 29th, when it may be remembered that the total subscriptions announced amounted to 65,000 francs, and the total expenditure to about 34,000 francs, leaving in hand a little over £1200. At that *séance* the proposal to make monthly grants to the indigent was adopted.

The Distribution of Funds in Belgium.

At the *séance* on May 6th subscriptions were announced bringing the total receipts up to 65,803 francs. On that date there remained in hand £800. The interesting announcement was made that Messrs. Elliman and Co., of Slough, had authorised M. Delacre to receive on behalf of the Belgian Committee the sum of £304 due to them from a Belgian creditor, and the creditor sent the money.

At that meeting a report was read of the sub-committee dealing with monthly grants to medical men. The first list included the widow of a doctor who had been shot—she is completely ruined; six medical men at Dinant whose property was destroyed; three other doctors in different districts in the same condition; and the widow of a doctor who was homeless. The committee unanimously approved monthly grants of 200 francs in all cases. M. Breugelmans reported on two cases, one of a physician and one of a pharmacist, in whose cases these grants had already been passed. He reported that the physician was living "as a day labourer, apparently by casual work or by jobs under a manager; in any case he who lived in plenty recently, now is in a very lonely plight, his family finds shelter under other roofs, and he himself, at an age when the spring is gone out of life, has to exist as a dependent." Notes of similar cases of cruel hardship were furnished, sufficiently proving to what excellent purpose the Belgian Committee is able to put any funds which the British Committee can send them.

At the séance of the Belgian Committee of May 20th additional subscriptions brought the total receipts of the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés to 75,000 francs. Grants amounting to 4000 francs had been made during the past fortnight, leaving in hand about £1000. Different members of the committee had received letters of gratitude from those helped, and some photographs of the premises of ruined doctors were laid on the table. Dr. Laruelle read a report on four cases of doctors requiring assistance. All these doctors had lost their homes, and their furniture and professional plant were burnt or destroyed; three of them were practising in entirely ruined districts. Dr. Laruelle, in recommending immediate grants, said that it was proposed later on to suggest monthly allocations for these men, as their means of existence would remain precarious. The sums of money were voted accordingly. M. Breugelmans reported on the position of two pharmacists. One of these, having two sons at the war, had rebuilt his house to prevent it falling down by mortgaging his property, and had acquired some stock on credit. For the time being he was carrying on business in premises which had been lent to him. The other had his premises completely burnt out, and had a wife and child to support from a business carried on in a ravaged district where the heads of families had been killed, leaving their families to charity. "Medicines are," said M. Breuglemans, "for the most part supplied on demand, to be paid for after the war, and the medical funds of manufacturing works are no longer running." M. Coppez, who had seen many of the sufferers, said that it was clear that the assistance given was most valuable, and would have to be renewed in most cases after July. Notice, however, would have to be given to those whom it concerned that the grants were for their sustenance, and must not be used, as had happened, to pay insurance premiums. The President of the Belgian Society reaffirmed the necessity of retaining much money for urgent cases, and the method of keeping the British Committee informed regularly of the cases helped was set down for future discussion.

A statement of accounts received by the British Committee through Professor Jacobs was read, showing that on June 10th about £700 remained with the Belgian Committee unexpended, from which £200 have to be deducted for purchase and sale of drugs. This statement of accounts, however, was dated on the day on which a further substantial grant was despatched to Belgium by the British Committee, so that for the time being the Belgian Committee is again in funds.

Mr. Meredith Townsend reported that two boxes of instruments, received from the Oamaru General Hospital, New Zealand, were ready for despatch to Belgium, and it has been ascertained through the National Committee for Relief in Belgium that surgical instruments are much wanted there.

The Treasurer's Statement.

Dr. Des Vœux announced that the sum of money received by him up to date amounted to £14,893, but all the local funds have not yet reached the central treasurer. A substantial proportion of this sum is on deposit at the bank and is bearing interest, but the committee recognised that steady and large subsidies would have to be sent to the Aide et Protection aux Médecins et Pharmaciens Belges Sinistrés, so that efforts to collect money must not be relaxed. Moreover, the supply of clothes to the refugee doctors and pharmacists and their wives was an increasing expense, and the need for distribution in this country might become larger.

THE WEEK'S SUBSCRIPTIONS.

	£	s.	d.
Bournemouth Division, B.M.A. (per Dr. Eleanor C. Boyd, Hon. Sec. (fourth donation—total, £123 9*s.* 6*d.*)—			
A. G. M.	0	5	0
Dr. B. Jones...	2	2	0
Major F. A. L. Hammond	2	2	0
Lord Egerton of Tatton	50	0	0
Dr. G. Maxwell Simpson	10	10	0
Coventry Division, B.M.A. (per Dr. W. H. Lowman, Hon. Sec.)—			
Dr. Hadley	0	10	6
Dr. Collington	0	10	6
Dr. Pocock	0	10	6
Dr. Phillips	0	10	6
Dr. Croft	0	10	6
Dr. Lowman	0	10	6
Dr. Newton	0	10	6
Dr. Kendrick	0	10	6
Dr. Ballantyne	0	10	6
Dr. Kenderdine	0	10	6
Dr. Brazil	0	10	6
Dr. Hawley	0	10	6
Dr. Orton	0	10	6
Dr. Barrs (collected by)—			
Dr. Smalles	2	2	0
Dr. Buck	1	1	0
Dr. Dyson	2	2	0
Dr. Griffith	3	3	0
Dr. Carter	3	3	0
Mr. Braithwaite	5	5	0
Surgeon Bradburn, R.N.	0	10	6
Aberdeen Division, B.M.A. (per Dr. J. R. Levack, Hon. Sec.) (second donation—total, £44 12*s.*)—			
Professor Marnoch, Dr. Usher, Dr. Shirreffs			

	£	s.	d.
Dr. Stephen, and Dr. Aymer...	16	12	0
North of England Branch of Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.) (sixteenth donation—total, £731 1s. 7d.)—			
Dr. F. Dawson	1	1	0
Dr. R. Walker	1	1	0
London College of Pharmacy, Students and Staff (per Mr. R. G. Matthews)	1	17	6
Dr. D. G. H. Carpenter (fourth donation—total, £4)	1	0	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

Surgical instruments should be sent to the Master of the Society of Apothecaries, Apothecaries' Hall, Blackfriars, E.C.

REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1913.

THE latest Indian Sanitary Report to be published deals with 1913, and resembles previous volumes in its general arrangement, but is not accompanied by a map, as has hitherto been the case, which somewhat detracts from its general utility and interest for the student of public health administration and tropical disease.

Health of the European Army in India.

The average strength of European troops in India during 1913 was 70,755 warrant and non-commissioned officers and men. Their admissions to hospital were in the ratio of 580·5 per 1000, the men constantly sick in hospital averaged 29·68 per 1000, the deaths were 3·26, and the invalids sent home 7·49, in ratios per 1000. The admissions were slightly higher than for 1912 (547·9 per 1000), as were the constantly sick and invaliding ratios, which for 1912 were 28·86 and 6·68 per 1000 respectively; but the deaths were considerably lower than in that year (4·62). As compared with the quinquennium 1908–12, the improvement is most marked, the ratios for that period having been 638·4 admissions, 60·29 constantly sick, and 6·07 deaths per 1000, while the invaliding had been 9·19. The death ratio of 3·26 is much lower than any previously recorded; the actual number was only 231 deaths during the year, as compared with 432, the annual average for 1908–12, when the strength of the force was practically the same. In the decennium 1881–1890 the admission ratio was 1458 per 1000, the constantly sick averaged 73 per 1000, the deaths 14·79, and the invalids 27 per 1000. It is well to recall these figures to the memory, in order to estimate the health conditions of the British soldier at the present day. The most fatal diseases in 1913 were enteric fever and pneumonia, each of which caused 15 deaths. From abscess of the liver there were 14, and from pulmonary tubercle 11 deaths. No other disease reached double figures.

Taking the average number of men constantly sick in hospital as a guide to the healthiness of a climate, or the reverse, it is seen that the Bengal and Orissa group of stations (Calcutta and neighbourhood) gave the highest ratio—namely, 43·2 per 1000, while in Southern India (Bangalore, Bellary, and Madras) this ratio was only 20·2, and in the Deccan (Secunderabad, Poona, Jubbulpore, &c.), 27·1. The admission ratio was highest in the North-West Frontier, Indus Valley and Rajputana group of stations (805·7), and lowest in the Deccan (461), and Southern India (463·5). The individual stations of importance that have suffered most from sickness have been Lahore, with an admission ratio of 1252, and 44·7 per 1000 constantly sick; Rawal Pindi, with corresponding ratios of 1123 and 44; and Peshawar, with 1007 and 38·6 per 1000; Nowshera and Ferozepore have had over 800 admissions per 1000. On the other hand, Belgaum had an admission ratio of only 251, the constantly sick being 20·4; at Bareilly these ratios were 355 and 17·7; at Bangalore 369 and 18·4; at Secunderabad, 393 and 21·7.

Principal diseases.—The chief cause of sickness in India continues to be fever of one kind or another, formerly returned as malaria, but now differentiated into malaria proper (for which the admissions were 125·5 per 1000), sandfly fever (with 28·9), and pyrexia of uncertain origin (with 15·6 admissions per 1000); under this last head are probably included undiagnosed cases of enteric and paratyphoid fevers. The malaria prevalence was considerably in excess of that in the previous year (82·4), but less than the average for 1903–12, which was 161·8. Uncertain pyrexia was less than in 1912 (21·2), and very much less than in 1903–12, when the ratio was 40·2 per 1000; sandfly fever (28·9) was practically the same as in the previous year (30·5). The diminution in cases returned as pyrexia of uncertain origin is satisfactory, "probably indicating greater discrimination and care in diagnosis." The admissions for malaria numbered 8880; the prevalence was chiefly in the Northern Army, where the admission ratio was 151 per 1000 (compared with 99 per 1000 in the Southern Army). The stations most severely affected were Lahore (with 785 admissions per 1000), Rawal Pindi (564), Karachi (360), Peshawar (351); these figures contrast strongly with the admission rate for such a notoriously malarious place as Delhi (206). If the admissions for sandfly fever are included, the Lahore figure must be increased by 35; those for Rawal Pindi by 101, Karachi by 48, and Peshawar by 247; there were no sandfly cases at Delhi. The outbreaks at Rawal Pindi and Lahore were especially severe; in the former station there had been only 175 admissions per 1000 in 1912. The increased incidence is attributed to the presence of a heavily infected indigenous community, the intermittency of the rains, and a prolonged hot weather. Malignant tertian was introduced by a company of Royal Artillery arriving from Delhi. Larvæ of *Anopheles culicifacies* were found in some tanks in the arsenal, the nearest barracks to which were occupied by the 21st Lancers, among whom a number were attacked by this form of fever. Systematic quinine administration and anti-malarial measures had a good effect. Malignant tertian also prevailed at Peshawar, having been probably introduced by the Liverpool Regiment from Lahore. At this last-named station, which suffered from malaria proportionately more than any other, 900 cases were admitted, of which 520 are stated to have been relapses. The reasons given for the outbreak are: the presence of a grave number of infected men, the large proportion of soldiers who had been in the plains for two or three years without change to the hills, an early and excessive rainfall resulting in the water-logging of a large area in the cantonment and the existence within half a mile of the British infantry barracks of numerous brickworks (opened within the last two years), where anophelines are abundant, presumably in excavation pits. The question naturally arises, How was such a condition of things allowed to occur? It is known that the surface soil consists of a layer of *kankar* difficult to drain on account of want of fall. That brickworks should have been established, or allowed to remain, near barracks seems a lamentable oversight in the year 1913. In the previous year Lahore suffered more than any other station in India from malaria; the admission ratio of 302 per 1000 in 1912 has risen to 785 per 1000 in 1913. At Karachi, in a lesser degree, there was excessive malarial prevalence, the admissions having been 360 per 1000, compared with 146 in 1912. The chief cause assigned is the comparatively heavy rainfall, combined with the existence of a large nullah in the Napier lines, in which a great deal of water lodges in the rains. The explanation is entirely satisfactory to the inquirer as to the causation of the outbreak; but again it must be asked, who was responsible that such a condition of affairs continued to exist in 1913? Quinine treatment has been found to be satisfactory. In one station the housing of malarial convalescents in a separate barrack proved to be very successful. The provision and use of mosquito-nets still leave much to be desired. It is suggested that in malarial stations infected men should be compelled to use them during the anopheline season; this seems very reasonable. The punkah cooly is a source of danger, and electric fans would be a good substitute. There were no cases of plague, and only five admissions for cholera in 1913.

The term *enterica* is used to signify enteric and paratyphoid fevers (A and B), for the sake of comparison with years before 1910, when they were first differentiated in

the returns. There were 164 cases and 18 deaths in 1913, giving ratios of 2·3 and 0·25 per 1000 of strength respectively. These are slightly less than those for 1912 (2·6 and 0·39). This admission ratio of 2·3 is to be compared with 8·5, the ratio for 1907–1911, and with 20·5, the average ratio for the decennium 1897–1906. The death ratio of 0·25 is to be compared with 1·59, the ratio for 1907–1911, and with 5·0 per 1000 in 1897–1906, in which period it averaged twenty times the mortality of the year under review. This immense reduction is highly satisfactory, and affords conclusive testimony to the skill and energy that have been devoted to improving the sanitary conditions of the troops in India during recent years. The largest number of cases at any one station during the year was 24 at Lucknow (9·3 per 1000); cases occurred in each month, but there was no actual outbreak. Poona had 18 cases, 13 of which were in June, July, and August; Rawal Pindi had 13, of which 4 were in September. Nowhere was there anything that can properly be called an epidemic. The highest admission ratio per 1000 of strength was 13·3 at Fyzabad, but this only represents 12 cases throughout the year. Anti-enteric inoculation progresses satisfactorily; over 93 per cent. of the European troops have been inoculated. In nearly every garrison all Indian cooks, mess servants, and others who have anything to do with the handling of food are inoculated as a routine measure. As regards the amount of protection afforded, the ratio of enteric fever admissions was 5·3 per 1000 of strength for non-inoculated men and 0·9 for those inoculated; the respective death ratios were 1·76 and 0·12 per 1000. Combining enteric and paratyphoid fevers, the admission ratio was 5·5 per 1000 for the non-inoculated and 2·1 for the inoculated; the corresponding death-rates were 1·76 and 0·15. Re-inoculation is urged after two years have elapsed. Some infantry battalions have not had a single case of enteric fever for more than two years. In these units it has been ascertained that inoculation has been almost universally adopted, and Indian cooks are not employed. It is concluded that the progressive decline in the prevalence of the disease is due to the high proportion of men protected by inoculation, the detection of carrier cases, the sending of convalescents to special depôts in the hills, and the disposal of night soil by incineration as well as general sanitary improvements all round.

There was an extraordinary increase in the prevalence of dengue, which caused 7446 admissions to hospital, and a constantly sick ratio of 19·84 per 1000. In 1912 there had been 364 admissions, in 1911 only 69. Possibly increased accuracy of diagnosis may in some degree account for the great apparent increase in the disease. The records indicate that in 1913 it began in Calcutta early in August, spreading up country by Dinapur, Allahabad, and Cawnpore to Ambala and Lahore; at Ambala there were 310 cases. No deaths occurred. Two deaths only resulted from rabies; 68 men underwent antirabic treatment at the Pasteur Institutes at Kasauli and Coonoor. During the last three years numerous cases of peripheral neuritis, now regarded as being beri-beri, have occurred at Lebong, a station in the Himalayas, near Darjiling; in 1913 there were 43 cases. A committee was appointed to inquire into the matter, and reported that the beri-beri was probably due to defect in the dietary, the meat and vegetables being of poor quality, the cooking inferior, and the food monotonous. At Barrackpore there were 19 cases, which were thought to be due to insect-carried infection. Dysentery and liver abscess continue to be at a low level; for the former the admissions were 5·4 and the deaths 0·13 per 1000, the corresponding ratios for the decennium 1903–12 having been 11·6 and 0·38; for liver abscess the admissions were 0·5 and the deaths 0·2 per 1000. Secunderabad had 75 cases of dysentery, a larger number than any other station, all of them being definitely diagnosed as amœbic; the mode of infection could not be traced, in spite of weekly inspections to detect carriers. All cases were treated with hydrochloride of emetine and all recovered completely but one, who was invalided home. There were fewer cases of heatstroke and sunstroke than usual, but at Peshawar in June and July a noteworthy series of 16 cases of heatstroke occurred, with typical hyperpyrexia (105° to 110° F.), all, however, resulting in recovery but one; the meteorological conditions are stated to have been very favourable to the occurrence of heatstroke. Some experiments were carried out to ascertain if there is any foundation for the popular belief that the colour of the helmet lining has an effect in reducing the air temperature inside the helmet; as might be expected, no variation was found in helmets having variously coloured linings; free ventilation of the helmet is what is required.

In regard to venereal diseases the satisfactory and progressive diminution, which had been interrupted in 1912, has been resumed. There were 52·5 admissions per 1000 for all forms of these affections, the lowest figure hitherto recorded; in 1912 the ratio had been 55·5; in 1903–1912 it had averaged 111; and in the decennium 1897–1906 it had been 273 per 1000. As usual, there were inexplicable variations in incidence. In Burma (excluding Rangoon) there were 124 admissions per 1000; in Calcutta the ratio was even 195 per 1000; at Secunderabad it was 44·3; at Pindi it was 34·3; and at Meerut only 26·8. The majority of cases were gonorrhœa. For syphilis the intravenous administration of salvarsan is combined with intramuscular injections of mercurial cream. Ten deaths from syphilis occurred during the year, the annual average being but 2; 4 of these deaths were due to gumma of the brain, 2 to endarteritis, 1 to cerebral hæmorrhage, 1 to enteritis, 1 to paralytic seizure, and 1 to old aortic disease. It is satisfactory to note that the admissions for syphilis have steadily diminished from 16·3 per 1000 in 1909 to 10·1 in 1913.

Health of the Indian Army.

The average strength of Indian troops in 1913 was 131,512, and their health was on the whole satisfactory, the admission and death-rates being the lowest on record. For all causes the admissions were 531·7 per 1000, compared with 547·5 in 1912 and 594·5 in the preceding quinquennium, 1907–1911. The constantly sick ratio was 21·4, and that for invalidity 5·32, both these being slightly above those for the preceding year (20·1 and 4·61), and practically the same as the quinquennial averages of 21·3 and 5·55. The death-rate, however (4·01 per 1000) was again the lowest on record. For the quinquennium 1907–11 it had been 5·72, and down to 1903 it had never been less than 10 per 1000. The main causes of sickness have been malaria (100·4 admissions per 1000), with 14·5 admissions for sandfly fever and 35·4 for pyrexia of uncertain origin; next, respiratory diseases (24·2), diarrhœa (13·9), venereal diseases (12·6), and dysentery (12). The diseases causing most deaths have been pneumonia (1·01 per 1000), pulmonary tubercle (0·24), enteric fever (0·23), and malaria (0·22). The Northern and Southern armies showed an even greater difference in their admission rates than usual, the ratios being 649 and 480 per 1000 respectively, chiefly due to greater prevalence of malaria, sandfly fever, and uncertain pyrexia in the former. There was more sickness in Assam (973 per 1000 admissions) than in any other province, chiefly due to malaria (270 per 1000). Southern India (Bangalore and Madras) was the healthiest area, having only 369 admissions per 1000. Malaria was especially prevalent at Kohat (516 per 1000), Delhi (498), and Lahore (378). The 33rd Punjabis suffered most with 524 admissions on a strength of 684; they occupied the notorious Darya Ganj lines at Delhi, long since condemned, and which will not again be used, as the new barracks in "Imperial Delhi" are nearly ready for occupation. Sandfly fever was reported throughout the country (1909 admissions) to a much greater extent than in 1912 (1316 admissions) or 1911 (114 admissions), but this is, of course, due to increased accuracy of diagnosis. Enteric fever was less prevalent than in the previous year; there were 207 cases altogether with 30 deaths, the ratios being 1·6 and 0·23 per 1000 respectively. There was no epidemic anywhere. Anti-enteric inoculation is making fair progress among Indian troops, more than 13,000 having been protected in this way. Cooks and those concerned in handling food have especially been inoculated. There were 22 cases of plague, 9 of which occurred in the 29th Lancers at Poona, where the disease was epidemic in the civil population; the whole regiment was inoculated.

General Population.

Amongst the general population the birth-rate rose from 38·95 to 39·37 per 1000, being 1 per 1000 above the quinquennial ratio; the death-rate fell from 29·71 to 28·72, practically 4 per 1000 below the quinquennial ratio of 32·77, and the lowest recorded since 1898, when it was 27·13.

There was a lessened incidence of disease all round, except in small-pox and fevers. Among the jail population the death-rate (15·52) was the lowest ever recorded.

The vast populations to be dealt with make the delay in publishing this mass of statistical information inevitable, for unless the details are scrutinised and arranged so that proper deductions can be made from them, such a report as this would lose more than half its utility. For purposes of comparison these annual reports are of the first value, for from them we can learn the practical success of different measures of preventive medicine in India.

THE NATIONAL INSURANCE ACT.

Complaints against Practitioners.

THE reports of the Medical Service Subcommittee presented at its recent meeting to the London Insurance Committee with regard to complaints against medical practitioners on the panel only showed the establishment of one charge of a serious character. This affected the treatment of four patients and was dealt with by severe censure, the practitioner being also informed that owing to the excessive number of patients on his list he must secure a suitable partner at an early date. Out of 16 other complaints nine were not substantiated, more than one being found to be entirely baseless, and in one of those not dismissed as unsubstantiated little blame could be attributed to the medical man. The finding in this instance was significant, as the subcommittee had come to the conclusion that the practitioner referred to "exercised his discretion in connexion with the supply of bandages to the insured person concerned, but that in his efforts to comply with the regulations, and not to prescribe extravagantly, the interests of the insured person suffered." No penalty was, of course, inflicted, and the subcommittee only suggested that the practitioner should be informed of the above finding, the fact being that he had recently been heavily surcharged for alleged excessive prescribing and that he had tried to avoid a repetition of this in a case where there was clearly some risk of its occurring. The patient was suffering from a badly ulcerated leg. She was a widow supporting her family, so that rest in bed was impossible for her, and the use of bandages in adequate numbers to permit of constant dressing of the leg was an expensive alternative which the practitioner shrank from adopting. The number which he actually prescribed, three per week, he admitted frankly was insufficient. A medical practitioner is certainly deserving of sympathy in such circumstances. He had already been surcharged, so that there was a "previous conviction" against him. The proper remedy, rest, was refused by the patient, and although this was through no fault of hers, there could be no certainty that the Insurance Committee would acquiesce in expenditure which, strictly speaking, was neither necessary in order to secure the best results nor likely to prove permanently effective. The same practitioner was actually complained of at the same time by another patient for whom he had refused to continue prescribing cod-liver oil and malt; here, however, the subcommittee found that he was justified. These two charges brought simultaneously against the same gentleman show that very unenviable alternatives are sometimes presented to the panel practitioner: a surcharge on the one hand may await him, and on the other a complaint made by the patient to the Insurance Committee which, however groundless, will have to be met and repelled.

The Question of Surcharges.

At a recent meeting of the Middlesex Insurance Committee, the clerk informed the committee that he had been served with a writ issued on behalf of a medical practitioner on the panel asking for an injunction to restrain the committee from making certain surcharges in respect of over-prescribing. He also reported with regard to another medical man, who was about to take proceedings of a similar character, the receipt of a letter from Messrs. Hempson, solicitors to the Medical Defence Union, asking that in order to prevent multiplicity of actions, no further steps should be taken by the committee in the latter case until the first had been decided. The General Purposes Subcommittee had considered Messrs. Hempson's letter, and had instructed the clerk to reply to it acquiescing in the proposal made. With regard to the action in which the writ had been issued, the clerk was instructed by the committee to act as solicitor in defending it.

Delayed Payment.

We have received the following letter from a correspondent signing himself "L.R.C.P., L.R.C.S.": "Towards the end of last April I wrote to the clerk of the county of Middlesex Insurance Committee, and asked him when the medical practitioners on the panel of the said county might anticipate their cheques for the last quarter of 1914. On April 29th I received a letter from the clerk in which he stated that 'The balance of fees accruing to you in respect to the past year cannot be paid until the Committee have been notified by the Commissioners as to the total amount available to them for the provision of medical benefit, and the delay in arriving at this amount rests solely with the Insurance Commissioners, and arises from the fact that so many insured persons have joined the navy or army during the latter part of last year.' Six months have now elapsed and up to the present we have not been paid, neither have we heard anything further from the clerk as to when we may expect to be paid. I wonder whether any other class of professional Government officials have been treated in the same way? We undertook to do certain work (according to the number of patients on one's panel) at a certain rate on behalf of the Government. A large majority of the practitioners who have not joined the army are taking on extra panel work. And it seems to me there ought to be some explanation forthcoming from the Insurance Commissioners in connexion with this matter."

Doctors on Active Service: A Difficulty in Worcestershire.

At a recent meeting of the Worcestershire Insurance Committee it was reported that the arrangements in certain cases made by the panel doctor who had joined the army presented difficulties. In one case a doctor, who had 240 patients on his panel list when he went away, made arrangements with a colleague to undertake the panel practice, but the latter doctor also joined the army, while the partner of the first practitioner was not on the panel, and found himself unable to do the work. The chairman of the Insurance Committee, Mr. Willis Bund, said that he was prepared to take a strong course, and if there were litigation as the result of it he would expect the committee to support him. As the 240 persons must have a medical adviser, he moved that the clerk write to them stating that their agreement with their original panel doctor was at an end, and asking them to choose another panel doctor. A resolution to this effect was carried, as was a further resolution holding up the cheques in this and two other cases until satisfactory arrangements were made.

National Medical Union and the National Insurance Act.

The National Medical Union held its annual general meeting at the Morning Post Buildings, 346, Strand, London, on June 26th, Mr. V. T. Greenyer, F.R.C.S., chairman of council, presiding. The report of the council was read, in which the work of that body during the past year was summarised, showing that it had been active in many directions in protecting the interests of non-panel practitioners. Particular attention was drawn to the fact that the validity of the medical certificates of members of the Union had been established by the council, when in response to their action the Insurance Commission found it necessary to publish a circular, as an instruction to Approved Societies, in which the independence of the non-panel practitioner and the validity of his certificate were duly acknowledged. The report of the council was adopted, as was a vigorous resolution pledging the National Medical Union to special activity against the National Health Insurance Acts. The rest of the proceedings consisted of a debate upon the moral value of military training.

THE DUKE OF WELLINGTON'S MEDICAL ATTENDANT.—In connexion with the Waterloo Centenary it is interesting to note that Dr. Henry F. Holland, who quite early in his professional career attended the Duke of Wellington for bronchial pneumonia, is still living at Godalming, and is 85 years of age. Dr. Holland was a student at Charing Cross Hospital.

MEDICINE AND THE LAW.

"Dr." Goldberg.

AT the Marylebone police-court on June 22nd, Henry John Goldberg, of 27, New Cavendish-street, W., was summoned by the British Dental Association for taking and using the title of "Dr. Goldberg, Dental Practitioner," implying that he was registered under the Dentists Act, 1878, and also that he was specially qualified to practise dentistry. Mr. R. W. Turner appeared for the British Dental Association. Mr. J. H. MacDonnell, solicitor, defended, and said he admitted the offence, though it was an accident. Mr. Turner said he proposed then to deal only with the offence of using the title "dental practitioner," and he would ask for another summons subsequently for implying special qualification as "Doctor." He said this was a case in which an unregistered person named Goldberg—who, so far as he knew, had no dental qualifications whatever, certainly none recognised in this country—had for the last 12 months been extensively advertising in the leading papers that he was carrying on dental practice at 27, New Cavendish-street. The advertisement, in which defendant used the title of "dental practitioner," was inserted in the *Times* and *Daily Telegraph* on Dec. 24th, 1914, and was as follows:—

Important Notice.—Some unscrupulous person or persons, for motives best known to themselves, are circulating that Dr. Goldberg, 27, New Cavendish-street, W., is a German. He is not a German, and is in no way whatever connected with Germans. Dr. Goldberg was the first dental practitioner to offer his services free to all volunteers who were refused owing to the state of their teeth, and was the means of many being accepted after being attended to by him.

Mr. Turner described the way in which the requisite evidence against Goldberg was got by an American lady inquiry agent, and added, with reference to defendant's boast to have done so much for the army, that hundreds of qualified dentists had given free services to recruits without self-advertisement of this kind; moreover, the War Office had definitely decided that unregistered persons like Goldberg should, under no circumstances, be employed for the dental treatment of soldiers. As far as could be ascertained, said counsel, Goldberg was at some period of his life a second-hand furniture-dealer in Dublin. He had claimed to be a dental graduate of the University of Pennsylvania, but official inquiries showed that this was false. The magistrate (Mr. Garrett) said there would be a penalty of £20 with 5 guineas costs.

Witnesses and Subpœnas.

To give evidence in a court of law in support of the claim of a patient for compensation for loss of health is a duty imposed at times upon a medical man which he accepts as incidental to his profession, though well aware that the money which will be paid to him in connexion with his appearance in the witness-box will not repay him for the inconvenience and loss of time inseparable from such an occasion. The following experience of a correspondent appears, however, to be new. He was served with a subpœna summoning him to appear as a witness in a case of workmen's compensation, and at the same time a guinea was paid to him by the solicitor. Soon after this he received a letter from the same solicitor informing him that the case in which his evidence was required had been settled and requesting him to return the guinea. This he refused to do, taking up the position that the money was in respect of the interview which he had with the solicitor in which he promised to attend and give evidence. The solicitor, however, seems to have written to the effect that he had never had any objection made to returning money in such circumstances, and to have maintained that the fee was paid in connexion with the subpœna only. We are not precisely informed as to what passed at the interview referred to, and we have not the correspondence before us, but are prepared to accept, for the purpose of discussion only, and without any authority to admit or deny anything on behalf of our correspondent, the solicitor's statement, which we understand to mean that the guinea was paid as "conduct money." Assuming it to have been so, we feel rather curious as to how often in the experience of this or any other solicitor the repayment of conduct money has been asked for when a case has been settled before trial, and whether its return has ever been enforced by a court of law. It may be that conduct money has its origin in the demand for payment which is sometimes made in court by a witness who has been served with a subpœna, and that such payment is insisted upon because money has been disbursed by the witness in travelling to the court. We are not aware, however, that when a small sum, usually a guinea, accompanies a subpœna as "conduct money," it is to be treated as an advance of money to be actually spent by the witness and to be reclaimed if it is not so spent, or as a fee which will have to be repaid if the witness does not actually appear in court. If the first were the case we should expect to find that a witness who had received a guinea, but whose journey, in fact, only cost 17*s.* 6*d.*, would be asked to return 3*s.* 6*d.* to the party who sought his assistance. In the other case the witness who did not give evidence or who did not reach the court before the case was settled would receive nothing for the preparation of his evidence, including an interview, or more than one, with a solicitor and nothing for the steps which he has to take, or to prepare to take, before leaving his patients and his practice temporarily in other hands. From the point of view of justice we would suggest that it would be at least as right to expect a barrister to return a fee which had accompanied his brief, because the client, after delivering the latter, had settled the case before it came into court. Yet we have never heard of counsel's fees being returned in such circumstances or of the subsequent payment of the fees not being expected when they did not accompany the brief. From the point of view of the law on the subject we have little to add to what we have said above. If there is any doubt it would be a good thing that it should be determined without delay, as we can refer to no precedent either for the demand made or for its enforcement.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held on June 25th at the office, 37, Soho-square, W. Sir HENRY MORRIS, the treasurer, presided, and was supported by a large number of governors.

The SECRETARY read the list of successful candidates, which was submitted by the scrutineers—Dr. F. de Havilland Hall, Mr. John H. Morgan, and Sir James Reid.

PENSIONERSHIPS.

	Votes.
†Soloman, Amelia	5545
†Leonard, Amelia S.	5325
†Phelps, Jane...	3740
*Stewart, Hedwig C. H.	3621
*Cornish, Fanny	3321

† "Burney Yeo" pensioners.
* Ordinary pensioners.

FOUNDATION SCHOLARSHIPS.

	Votes.
Milward, Wilmot E.	7707
Williams, Gerwyn D. B.	6927
Walsh, Raymond N.	6141
Mitchell, James G.	5051
Heelas, Dan S.	4593

Sir HENRY MORRIS submitted the annual report of the council for the past year, which stated that the attention of the council was drawn immediately after the last annual general meeting to disadvantages in connexion with the system of voting which had been hitherto in existence. The matter was referred to a special committee which, after very careful consideration, had decided that alterations in the by-laws dealing with the voting system ought to be recommended to the governors at the next annual general meeting. The committee had considered the varying advantages and disadvantages of several methods of allocating votes in return for contributions, and ultimately decided to recommend to the council that the practice of giving votes separately for all three classes—namely, for pensioners, foundation scholars, and annuitants—according to the number of vacancies in each class should be discontinued, and that in lieu thereof 10 votes be allotted at each election for every guinea subscribed, or for every life vote registered against a governor's name, with the option of recording such votes for pensioners alone, or for foundation scholars alone, or for annuitants alone, or for all three classes, and of either distributing them or "plumping" them.

Two important advantages would ensue from this change—namely (1) in future there would not be the variation in the number of votes given to each governor annually as a result of the rise or fall in the number of vacancies, and (2) there would not be the present incentive to exchange votes, since a governor would be able to give all his votes for a pensioner, or for a foundation scholar, or for an annuitant.

The school discipline and work throughout the College had been entirely satisfactory. The various games had been played successfully, and the school institutions had retained their popularity. Since the last annual general meeting D. J. Atkinson had won a College exhibition of £80 for natural science at Christ Church, Oxford, and H. E. Suter had obtained the Frederick John Palmer Scholarship at St. Mary's Hospital. Ten boys had passed the whole of the first examination for medical degrees of the University of London; 18 boys had passed the matriculation examination of the same University, six of them being in the first class; 12 boys had gained the higher certificate of the Oxford and Cambridge Schools Examination Board; 11 had obtained school certificates; and 17 had gained lower certificates.

In proposing that the annual report be adopted, Sir Henry Morris drew attention to the fact that four of the masters had taken temporary commissions, and that over 400 old Epsomians had joined the Forces, including 290 officers in the Royal Navy, the Regular Army, the Special Reserve, the Territorial Force, and holding temporary commissions. The roll of honour of old Epsomians included 11 who had been killed in action, 2 who had died in hospital, and 19 who had been wounded. The names of 14 old Epsomians had been mentioned in despatches, 1 (since killed) had been awarded the Distinguished Service Order, and 3 had been awarded the Military Cross.

Sir Henry Morris further drew attention to the fact that two new pensionership funds had been founded since the last annual general meeting—namely, one by the late Mrs. Bridget Sarah Grewcock, and the other by the late Dr. Isaac Burney Yeo.

The usual formal business having been transacted, including the adoption of new by-laws and of amendments in existing by-laws, Sir JAMES REID proposed that a cordial vote of thanks should be passed to Sir Henry Morris for the great services rendered to the College as treasurer, which was seconded by Sir FREDERICK NEEDHAM and passed by acclamation.

THE SERVICES.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel (local Colonel) Richard R. Sleman, R.A.M.C. (T.F.), to be temporary Colonel whilst employed as Deputy Director of Medical Services at Malta (dated May 15th). Temporary Lieutenant-Colonel Charters J. Symonds, from Royal Army Medical Corps, to be temporary Colonel (dated June 13th).

The undermentioned officers, R.A.M.C.(T.F.), to be temporary Colonels:—Dated June 13th: Major A. H. Tubby, Captain V. W. Low, and Captain J. P. Stewart.

ROYAL ARMY MEDICAL CORPS.

Captain Sir Victor Alexander Haden Horsley, R.A.M.C. (T.F.), to be Major (dated May 14th). Captain Thomas Crisp English, R.A.M.C. (T.F.), to be temporary Lieutenant-Colonel (dated June 16th).

Ernest Frederick Eliot is granted temporarily the honorary rank of Major (dated June 24th).

Temporary Lieutenant Thomas Kay, Major, R.A.M.C. (T.F.), to be temporary Major (dated June 24th). Bernhard Ehrenfried Myers to be temporary Major whilst serving with the New Zealand Auxiliary Hospital (dated June 24th). Captain Charles S. Myers to be temporary Major (dated March 28th). Benjamin Thomas Edye to be temporary Captain whilst serving with the Australian Hospital (dated June 3rd).

The undermentioned to be temporary Captains:—Dated June 1st: James Walker Beattie. Dated June 24th: Temporary Lieutenant Harold Wiltshire.

Temporary Lieutenant Vivian P. Foote relinquishes his commission on account of ill-health (dated June 15th).

Lieutenant Ronald Russell Scott, C.A.M.C., to be temporary Lieutenant (dated May 22nd).

The undermentioned non-commissioned officers and men of the Canadian Army Medical Corps to be temporary Lieutenants: Dated June 2nd: Corporal Ernest Lachopelle. Dated June 4th: Staff-Sergeant George Frederick Laing, Sergeants Robert Stanley Armour, Phillippe Bernard Belanger, John Ranson Howitt, Otto de Muth, Cecil Darling Kean, and Harold Francis Hope Eberts; Privates Albert Davis Sharp, Harold Clifford Wert, Lee Smith, Cecil Owen Walsh, Francis Sharpe Walcott, Frederick Russell Kirkham, Benjamin Franklyn Macnaughton, William Templeman, Lavell Hall Leeson, and Irving Daniel Ramsay.

The undermentioned to be temporary Lieutenants:—Dated June 1st: James Renfrew White, Joseph Jopling Brown, Maberly Squire Esler, William John Patterson, Donald George Macleod Munro, Frederick George Gibbs, John Lindesay Pearce, Oswald John William Adamson, George Spencer Armitage Bishop, Edward William Anderton, James O'Dowd Egan, Claude Alfred Heath Gee, Robert Cunyngham Brown, William George Southey, Felix Arthur Kerr, George Alexander Pringle, Bartholomew Langran, Robert Philip Garrow, George Barton McCaul, Patrick Gerald Tuohy, John Richard Rygate, Francis Garland Collins, Andrew Blair Aitken, Reginald Ambrose Facey, Henry Saunders, Butler Hogan, Robert Rutherford, Robert Daniel Bridger, Thomas George Stevens, John George Garson, Samuel Greenwood, Dan Tenison, Donald Carmichael Thomas, Charles Jerome Tisdall, John Joseph Gibb, William Robinson, Francis William Garrad, Hugh Roker Evans, Malcolm William Stewart-Smith, Hugh McMillan Donaldson, Alfred Vella, George Younger Richardson, Frederick James Dixon, John Wright, Francis Gerrard Hamilton Cooke, Archibald Stevenson, John Alexander Wilson, Hugh Charles Mary McManus, Leonard Horner Bryson, Henry MacCormac, Harold Herbert Tanner, John Young, Donald Mackinnon, William Kelman Macdonald, George Edwin Davidson, Leslie Valentine, Francis Heatherley, John Crighton Bramwell, Cecil William Bond, Cyril Searle Gideon, James Charles McWalter, Leander Lowrie Fyfe, Oliver Bruce, Charles Wolfe Hamilton, Algernon Meyrick Alban James, William Leslie Hay, John Lewis Anderton Grout, Arthur Trower, Joseph Hambley Rowe, Edmund Neptune Russell, Arthur Carlile Sturdy, Thomas George Smith Hodson, James Laird, Francis McKee, Theodore John Phillips, Alan Murdoch, William Enraght, John Geddes Scott, and George Eric Beggs. Dated June 2nd: Andrew Cochrane, Murtaugh James Houghton, Percy William Moore, Vincent Frederick Lennane, and Richard Lewis. Dated June 3rd: Herbert George Willis, William George Brett, Gerald Septimus Samuelson, Thomas Heywood, and Charles Vivian Cornish. Dated June 4th: Percy Stanley Hopkins, James Russell, and Hugh Michael Collins. Dated June 5th: Oliver Eaton, James Harvey Cuthbert, Meyer Cohen, and Temporary Honorary Lieutenant Hugh Leonard Burton.

The undermentioned temporary Lieutenants, having ceased duty with the British Red Cross Hospital, Netley, relinquish their commissions: Maberly S. Esler (dated May 24th) and Donovan B. Pascall (dated June 8th).

INDIAN MEDICAL SERVICE.

Temporary Lieutenant Henry Charles Semon to be temporary Captain.

The promotion of Major William Charles Ross to his present rank is antedated from July 26th, 1914, to Jan. 26th, 1914.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants (on probation) are confirmed in their rank: Ralph R. Thompson, Ian C. Mackay, and David W. J. Andrews.

Patrick Cameron MacRae, Cadet of the Officers Training Corps, and William Joseph Webster, ex-Cadet of the Officers Training Corps, to be Lieutenants (on probation).

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st London (City of London) Field Ambulance: Lieutenant Arthur D. Griffith to be Captain. Thomas Ainsworth Townsend to be Lieutenant.

2nd London (City of London) General Hospital: Captain Frederick J. Smith to be Major. Ashley Skeffington Daly to be Captain, whose services will be available on mobilisation. Lieutenant Kenneth B. Clarke, from the 1st North Midland Field Ambulance, to be Lieutenant.

3rd London General Hospital: To be Captains: Vincent Zachary Cope, whose services will be available on mobilisation, and Reginald Smith (late Captain, 4th Battalion, The Prince of Wales's Volunteers (South Lancashire Regiment)), whose services will be available on mobilisation. To be Lieutenant: Lionel Beale Clarke.

4th London General Hospital: George John Jenkins to be Captain, whose services will be available on mobilisation.

1st Northern General Hospital: Thomas Smirk Percival Parkinson to be Lieutenant.

3rd Northern General Hospital: The undermentioned to be Lieutenants: Theodore Allen, Gordon Fowler Stones, and William Wilfred Nicholas King.

1st London Casualty Clearing Station: Lieutenant Arthur H. Pemberton, from Attached to Units other than Medical Units, and Lieutenant Hubert J. B. Fry, from 2nd London (City of London) General Hospital, to be Lieutenants.

4th Southern General Hospital: Thomas Mitchell Jamieson to be Captain, whose services will be available on mobilisation.

5th London Field Ambulance: Robert Walter Baron to be Lieutenant.

1st Lowland Field Ambulance: William Ballantine Stewart to be Lieutenant.

3rd Lowland Field Ambulance: Neil Scott to be Lieutenant.

1st Highland Field Ambulance: Henry Begg to be Lieutenant.

2nd Northern General Hospital: The undermentioned to be Captains, whose services will be available on mobilisation: William Maxwell Munby and William Gough.

1st Southern General Hospital: Aubrey Radford to be Lieutenant.

3rd Southern General Hospital: Captain Edward W. S. Rowland is seconded for duty at Reading War Hospital.

Highland Mounted Brigade Field Ambulance: William Hubert Milligan (late Cadet, University of London Contingent, Senior Division, O.T.C.) to be Lieutenant. Lieutenant John Broadfoot resigns his commission on account of ill-health.

Notts and Derby Mounted Brigade Field Ambulance: Captain Francis R. M. Heggs, from the Territorial Force Reserve, to be Captain (temporary).

2nd Northumbrian Field Ambulance: Major J. McD. Nicoli to be temporary Lieutenant-Colonel.

1st West Riding Field Ambulance: Thomas Ingham Mills to be Lieutenant.

2nd West Riding Field Ambulance: Alfred G. Hebblethwaite to be Lieutenant.

2nd Welsh Field Ambulance: Captain Charles L. Isaac, from Attached to Units other than Medical Units, to be Captain (temporary).

2nd Wessex Field Ambulance: John Walter Slaughter, retired Fleet-Surgeon, R.N., to be Major (temporary).

5th Southern General Hospital: William Young Woodburn to be Captain, whose services will be available on mobilisation.

1st London (City of London) Sanitary Company: Walter Donald Carruthers to be Lieutenant.

North Midland Divisional Sanitary Section: Adam White to be Lieutenant.

Highland Casualty Clearing Station: To be Lieutenants: John Alexander Innes and John Dow.

Attached to Units other than Medical Units.—To be Majors: Captain James N. Macmullan and Captain James Walker. Captain William Manson Fergusson resigns his commission on account of ill-health. To be Captains: Lieutenant Charles L. Isaac and Lieutenant John C. Bridge. To be Lieutenants: Francis John Davidson, John James Weaver (late Lieutenant, R.A.M.C.(T.F.)), Alfred Gelsthorpe Osborn, and James John Marsh.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 7759 births and 4293 deaths were registered during the week ended Saturday, June 26th. The annual rate of mortality in these towns, which had been 13·9, 13·5, and 12·4 per 1000 in the three preceding weeks, further declined in the week under notice to 12·3 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first 12 weeks of the second quarter of this year the mean annual death-rate in these towns averaged 15·4, against a corresponding rate of 15·5 per 1000 in the metropolis. The annual death-rate last week ranged from 5·9 in Tottenham, 6·0 in Enfield, 6·1 in Wimbledon and in Lincoln, 6·4 in Newport (Mon.), and 7·0 in Leyton, to 19·9 in Cambridge, 20·1 in South Shields, 20·3 in Halifax, 22·7 in Middlesbrough, and 23·7 in Carlisle.

The 4293 deaths from all causes were 4 fewer than the number in the previous week, and included 370 which were referred to the principal epidemic diseases, against numbers declining from 489 to 374 in the three preceding weeks. Of these 370 deaths, 157 resulted from measles, 68 from infantile diarrhœal diseases, 62 from whooping-cough, 46 from diphtheria, 25 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1 per 1000, and coincided with that recorded in the previous week. The deaths attributed to measles, which had been 239, 215, and 162 in the three preceding weeks, further fell to 157 last week, and caused the highest annual death-rates of 2·0 in Sheffield and in Aberdare, 2·8 in Walsall, 3·3 in Derby, 3·8 in Sunderland, and 4·9 in Middlesbrough. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 75, 90, and 68 in the three preceding weeks, were again 68 last week, and included 15 in London, 6 in Manchester, 5 in Birmingham, and 4 in Sheffield. The fatal cases of whooping-cough, which had declined from 137 to 60 in the five preceding weeks, slightly rose to 62 last week, of which 15 occurred in London, 5 in Liverpool, and 4 each in Birmingham, St. Helens, and South Shields. The deaths attributed to diphtheria, which had been 50, 33, and 45 in the three preceding weeks, were 46 last week, and included 13 in London and 3 in Portsmouth. The deaths referred to scarlet fever, which had increased from 20 to 29 in the five preceding weeks, fell to 25 last week, of which 10 were registered in London, and 2 each in Salford and Bradford. The fatal cases of enteric fever, which had been 13, 7, and 10 in the three preceding weeks, rose to 12 last week, and included 4 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 2252 to 2373 in the four preceding weeks, had further risen to 2422 on Saturday last; 332 new cases were admitted during the week, against 327, 330, and 330 in the three preceding weeks. These hospitals also contained on Saturday last 1035 cases of diphtheria, 74 of measles, 52 of enteric fever, and 10 of whooping-cough, but not one of small-pox. The 1023 deaths from all causes in London were 28 in excess of the number in the previous week, and corresponded to an annual death-rate of 11·8 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 469 to 153 in the ten preceding weeks, further fell to 144 in the week under notice, and were equal to the number in the corresponding week of last year.

Of the 4293 deaths from all causes in the 96 towns, 214 resulted from different forms of violence, and 341 were the subject of coroners' inquests, while 1291 occurred in public institutions. The causes of 31, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, and in 56 other smaller towns. Of the 31 uncertified causes, 6 were registered in Birmingham, 3 each in Liverpool and Sunderland, and 2 each in Gillingham, Warrington, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1116 births and 708 deaths were registered during the week ended Saturday, June 26th. The annual rate of mortality in these towns, which had been 18·9, 17·9, and 15·7 per 1000 in the three preceding weeks, was again 15·7 per 1000 in the week under notice. During the first 12 weeks of the second quarter of this year the mean annual death-rate in these towns averaged 18·2, against a corresponding rate of 15·4 per 1000 in the 96 large English towns. Among the several towns the death-rate last week ranged from 2·8 in Kilmarnock, 7·6 in Falkirk, and 8·8 in Perth, to 17·9 in Kirkcaldy, 19·9 in Aberdeen, and 21·7 in Ayr.

The 708 deaths from all causes were 4 in excess of the number in the previous week, and included 133 which were referred to the principal epidemic diseases, against 148 and 137 in the two preceding weeks. Of these 133 deaths, 79 resulted from measles, 25 from whooping-cough, 12 each from scarlet fever and infantile diarrhœal diseases, 4 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·0, against 1·1 per 1000 in the large English towns. The deaths attributed to measles, which had been 85, 80, and 89 in the three preceding weeks, fell to 79 last week, and included 51 in Glasgow, 18 in Aberdeen, and 2 each in Edinburgh and Kirkcaldy. The deaths referred to whooping-cough, which had declined from 43 to 19 in the four preceding weeks, rose to 25 last week, of which 15 were registered in Glasgow, 5 in Edinburgh, and 2 in Ayr. The fatal cases of scarlet fever, which had been 7, 12, and 5 in the three preceding weeks, rose to 12 last week, and included 6 in Glasgow and 2 in Paisley. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 12, and 17 in the three preceding weeks, fell to 12 last week; 4 deaths were recorded in Dundee, and 2 each in Glasgow and Motherwell. The 4 deaths referred to diphtheria were 3 below the average in the earlier weeks of the quarter, and comprised 3 in Glasgow and 1 in Coatbridge. The fatal case of enteric fever was registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 145, 126, and 93 in the three preceding weeks, were 92 in the week under notice, and were 28 in excess of the number in the corresponding week of last year. The deaths from different forms of violence numbered 21, against 25 and 21 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 579 births and 345 deaths were registered during the week ended Saturday, June 26th. The annual rate of mortality in these towns, which had been 17·0, 15·4, and 14·2 per 1000 in the three preceding weeks, rose to 14·8 per 1000 in the week under notice. During the first 12 weeks of the second quarter of this year the mean annual death-rate in these towns averaged 18·5, against corresponding rates of 15·4 and 18·2 per 1000 in the English and Scotch towns

respectively. The annual death-rate last week was equal to 15·7 in Dublin (against 11·8 in London and 17·5 in Glasgow), 12·9 in Belfast, 21·8 in Cork, 11·4 in Londonderry, 10·8 in Limerick, and 20·9 in Waterford, while in the 21 smaller towns the mean death-rate was 14·9 per 1000.

The 345 deaths from all causes were 14 in excess of the number in the previous week, and included 23 which were referred to the principal epidemic diseases, against 21 and 25 in the two preceding weeks. Of these 23 deaths, 8 resulted from measles, 5 from scarlet fever, 4 each from whooping-cough and infantile diarrhœal diseases, and 1 each from enteric fever and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·0, against corresponding rates of 1·1 and 3·0 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 3, 7, and 6 in the three preceding weeks, rose to 8 last week, and comprised 5 in Belfast, 2 in Dublin, and 1 in Cork. The 5 deaths referred to scarlet fever were 2 in excess of the average in the earlier weeks of the quarter, and included 3 in Belfast. The fatal cases of whooping-cough, which had been 5, 9, and 6 in the three preceding weeks, fell to 4 last week, and included 2 in Dublin. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 12, 2, and 7 in the three preceding weeks, fell to 4 last week, and included 2 in Dublin. The fatal case of diphtheria occurred in Dublin, and that of enteric fever in Londonderry.

The deaths referred to diseases of the respiratory system, which had been 56, 64, and 57 in the three preceding weeks, further fell to 42 in the week under notice. Of the 345 deaths from all causes, 108, or 32 per cent., occurred in public institutions, and 6 resulted from different forms of violence. The causes of 15, or 4·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 English towns the proportion of uncertified causes did not exceed 0·7 per cent.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION:

Summary of Reports for Month ending March 31st, 1915.

1	2	3	4	5	6	7	8	9	10	11	12
			Metric tons of deposit per square kilometre during month.								
			Insoluble matter.			Soluble matter.			Included in soluble matter.		
Place.	Correspondent.	Rainfall in millimetres.	Tar.	Carbonaceous other than tar.	Ash.	Loss on ignition.	Ash.	Total solids.	Sulphate as (SO_4).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND—											
Birmingham, Central ...	Dr. J. Robertson, M.O.H.	20	0·12	3·90	12·38	1·30	4·20	21·90	2·60	0·40	0·03
,, Aston	,,	18	0·10	1·12	3·68	0·80	2·80	8 50	1·70	0·20	0·02
,, S.W.	,,	20	0·03	0·92	2·85	0·50	2·10	6·40	1·20	0·20	0 02
Bolton	Dr. J. E. Gould, M.O.H.	58	0·15	3·05	11·59	2·56	5·57	22·92	3·72	1·04	0·06
Exeter	Mr. F. Southerden.	9	0·04	2·81	4·25	0·51	1·81	9·42	1·00	0·12	0·02
Kingston-upon-Hull	Mr. A. R. Tankard, Public Analyst.	31	0·08	2·23	4·85	1·95	4·20	13·31	2·45	0·43	0·04
Liverpool	Dr. E. W. Hope, M.O.H.	39	0·42	1·91	11·48	2·17	5·05	21·03	2·86	0·83	0·11
London—											
Meteorological Office ...	Director, THE LANCET Laboratory.	16	0·13	0·32	7·01	1·66	4·00	13·00	1·62	0·82	0·03
Embankment Gardens ...	Mr. J. Ollis, Chief Officer, Public Control Department, L.C.C.	17	0·23	2·63	8·12	1·69	4·36	17·03	2·41	0·84	0·03
Finsbury Park	,,	25	0·12	1·08	4·61	0·74	2·57	9·12	1·57	0·21	0·03
Ravenscourt Park	,,	19	0·04	0·78	2·59	1·13	4·62	9·16	2·90	0·28	0·07
Southwark Park	,,	21	0·10	2·63	7·09	0·83	4·56	15·21	2·33	0·41	0·04
Wandsworth Common ...	,,	19	0·02	0·75	2·92	2·96	6·86	13·51	4·14	0·70	0·04
Victoria Park	,,	22	0·04	0·79	1·96	0·88	3·18	6·85	1·71	0·30	0·01
Golden Lane	Dr. W. J. Howarth, M.O.H.	18	0·06	3·49	6·68	1·39	3·35	14·96	2·22	0·51	0·08
Malvern	Mr. W. Osborne Thorpe, Engineer U.D.C.	19	—	0·38	0·13	0·27	0·54	1·01	0·28	0·10	0·01
Manchester—											
Ancoats Hospital	Mr. J. Warrington, Secretary, Air Pollution Advisory Board.	34	0·15	4·95	13·08	1·77	7·03	26·98	4·17	0·76	0·05
Bowdon	,,	32	0·02	0·69	2·64	0·57	2·23	6·15	1·22	0·32	0·03
Cheadle	,,	33	0·06	2·14	3·95	0·53	2·68	9·36	1·53	0·34	0 05
Davyhulme	,,	28	0·02	1·14	4·56	0·71	4·40	10·83	2·61	0·42	0·05
Fallowfield	,,	33	0·06	1·62	5·59	0·81	4·09	12·17	2·36	0·43	0·04
Moss-side	,,	34	0·10	2·17	6·25	1·25	4·57	14·34	2·49	0·72	0·06
Philips Park	,,	31	0·15	3·03	8·99	1·29	6·16	19·62	3·44	0·79	0·04
Queen's Park	,,	32	0·08	2·24	7·85	1·03	5·11	16·31	2·95	0·63	0·03
School of Technology ...	,,	32	0 12	3·31	7·76	1·30	4·14	16·63	2·28	0·73	0·04
Whitefield	,,	38	0·01	1·63	5·87	0·93	5·19	13·63	3·12	0·46	0·04
Newcastle-on-Tyne	Dr. H. Kerr, M.O.H.	52	0·10	3·38	5·50	1·66	3·94	14·59	2·50	0·48	0·15
Oldham	Dr. J. B. Wilkinson, M.O.H.	46	0 38	6·49	20·4	2·41	6·30	36·0	2·59	0·89	0·13
Sheffield—											
Attercliffe Burial Ground	Professor W. P. Wynne, The University.	32	0·14	3·84	8·36	2·06	4·43	18·82	1·91	1·61	0·03
Hillsborough Park	,,	35	0·08	1·47	4·09	0·95	4·13	10·72	2·28	0·67	0·03
Meersbrook Park	,,	33	0·08	1·88	5·22	0·88	5·00	13·06	2·13	0·66	0·03
Weston Park	,,	36	0·05	1·45	4·42	2·03	4·43	12·38	2·77	0·65	0·03
York...	Dr. E. M. Smith, M.O.H.	28	0·08	1·08	4·63	1·09	2·8	10·41	1·49	0·44	0·07
SCOTLAND—											
Coatbridge	Mr. A. G. Dutch, Chief Sanitary Inspector.	62	0·08	1·21	2·36	1·03	1·94	6·62	1·13	0·27	0·10
Greenock	Mr. J. Devine, Sanitary Inspector.	77	0·06	3·84	6·78	1·93	2·79	15·41	2·25	0·29	0·16
Leith	Mr. Thomas Bishop, Sanitary Inspector.	33	0·06	0·76	3·17	1·47	3·34	8·80	1·38	0·88	0·13
Paisley	Mr. W. W. Kelso, Sanitary Inspector.	46	0·20	4·44	7·84	1·84	3·32	17·64	1·33	0·18	0·05

Col. 4 includes all matter insoluble in water but soluble in CS_2. Col. 5 includes all combustible matter insoluble in water and in CS_2. Col. 6 includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9lb. per acre; (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall (see Col. 3).

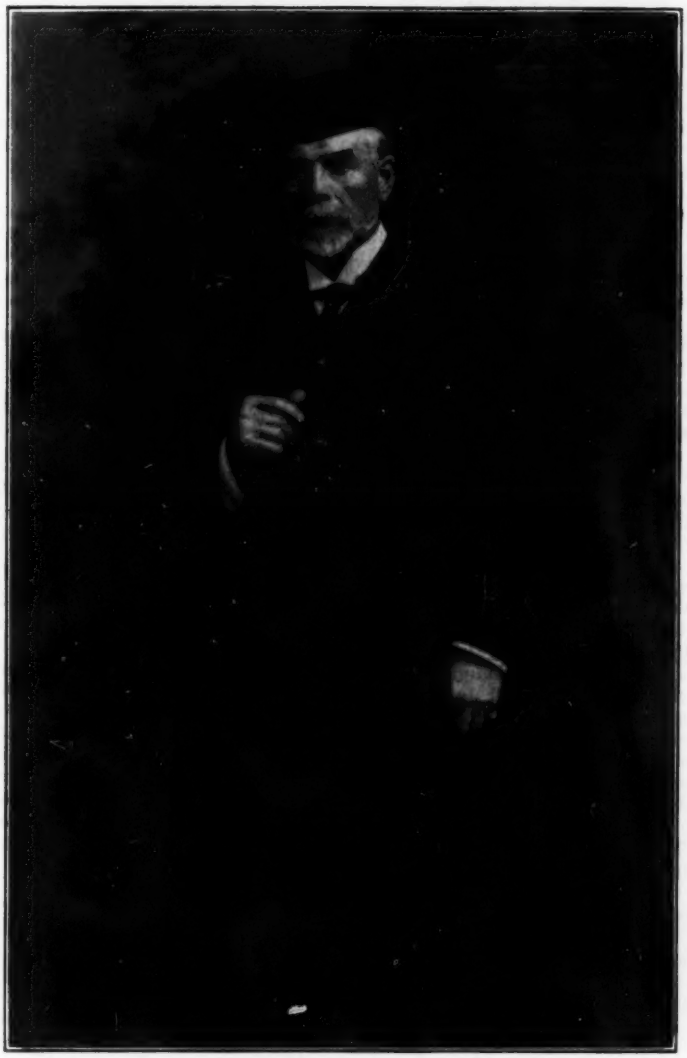
The analytical work involved in these returns was undertaken respectively by J. F. Liverseege, F.I.C., Birmingham; Harry Hurst, B.Sc., F.I.C., Bolton; F. Southerden, B.Sc., F.I.C., Exeter; A. R. Tankard, F.I.C., Kingston-upon-Hull; W. H. Roberts, M.Sc., F.I.C., Liverpool; S. A. Vasey, F.I.C., Director, THE LANCET Laboratory (London Meteorological Office collections); J. H. Coste, F.I.C. (Embankment Gardens, Finsbury Park, Ravenscourt Park, Southwark Park, Wandsworth Common, Victoria Park collections), London; F. L. Teed, D.Sc., Golden-lane, London, E.C.; C. C. Duncan, F.I.C., Malvern; E. Knecht, Ph.D., M.Sc., Ancoats Hospital, Bowdon, Cheadle, Davyhulme, Fallowfield, Moss-side, Philips Park, Queen's Park, School of Technology, Whitefield (Manchester collections); J. T. Dunn, D.Sc., Newcastle-on-Tyne; Samuel Urmson, Oldham; Professor W. P. Wynne, Attercliffe Burial Ground, Hillsborough Park, Meersbrook Park, Weston Park (Sheffield collections); S. H. Davies, M.Sc., York; Messrs. R. R. Tatlock and Thomson, Coatbridge; Messrs. J. W. Biggart, F.I.C., and McCowan, Greenock; A. Scott Dodd, B.Sc., F.I.C., and R. M. Clark, B.Sc., Leith and Paisley respectively. The correspondents referred to in col. 2 are for the most part public health authorities.

Obituary.

PROFESSOR FREDERICK HOWARD MARSH, M.A., M.C., SC.D. CANTAB., F.R.C.S. ENG.,

MASTER OF DOWNING COLLEGE, CAMBRIDGE, AND PROFESSOR OF SURGERY IN THE UNIVERSITY.

Professor Howard Marsh, Master of Downing College and professor of surgery in the University of Cambridge, died on June 24th at Downing Lodge, in the seventy-sixth year of his age.



PROFESSOR FREDERICK HOWARD MARSH.

Frederick Howard Marsh was born at Homersfield, Suffolk, in 1839, and just about the time when the late Sir James Paget was entering upon the most brilliant phase of his career as a surgeon, he came under this great teacher, also a Suffolk man, and from him he subsequently received much of his professional education. He entered St. Bartholomew's Hospital in 1858, when the surgical staff consisted of, among others, Sir William Lawrence, Sir James Paget (neither had then received his baronetcy), and Luther Holden, with Savory as the junior assistant surgeon. Howard Marsh qualified in 1861 by taking the Membership of the Royal College of Surgeons of England. He became a Fellow of the College five years later, and after holding the position of demonstrator of anatomy in the medical school, and some other minor appointments, he was appointed in 1873 assistant surgeon to St. Bartholomew's Hospital. A few years later he became surgeon to the Children's Hospital, Great Ormond-street, and in 1892 he was appointed full surgeon to St. Bartholomew's Hospital, and for many years was a lecturer, first in anatomy and then in surgery, in the medical school. In 1904 he became consulting surgeon to St. Bartholomew's Hospital, and he held a similar position at the Hospital for Sick Children.

Early in his career Howard Marsh became a well-known consultant surgeon and especially was recognised as an authority on diseases of the joints, where his intimate and practical knowledge of anatomy was supplemented by a sound pathological equipment. As a result of a large and ripe clinical experience in orthopædics he published in 1895 "Diseases of the Joints and Spine," a book which advocated conservative methods of treatment in many directions exactly at the time when antiseptic teaching had revealed the wonderful results that might follow operative interference, hitherto undreamt of. Before the publication of this work Marsh had taken a strong line in combating views advocating general resort to operation in the early stage of tuberculous disease of the joints, and in his book he made his position in the matter very distinct. He edited the "Clinical Essays and Lectures" of Sir James Paget, and from time to time contributed to THE LANCET and other medical publications. Just before the end of his active work at St. Bartholomew's Hospital he published a collection of these contributions to the medical press, and his wide range of observation was proved by this issue in one volume of sound practical lessons on so many different topics. A chapter in this book upon the etiology of mistakes in diagnosis is an admirable piece of medical philosophy. He also rendered for some time great assistance to the editorial department of this paper. His

written work was always founded on his personal experience and was studiously free from digression or periphrasis. He was not, however, colloquial in his books, but as a lecturer he was distinctly so.

"I remember," writes one of his pupils, "when he first came on as lecturer in anatomy. He was a good teacher. His simple and clear expositions of difficult pieces of anatomical geography were delightful. For instance, to illustrate the pelvic fasciæ he invented a wonderful series of flannel petticoats of different colours, hung in a rough wooden frame shaped like the pelvic bones. He usually began his exposition with 'Look here, you fellows,' and ended up with 'So you see it goes in that sort of way'; but he made dull minds really see how it did go. As time went on he became a more finished speaker, but he was always breezy and unconventional. To students he was geniality and courtesy itself. He never minded being invaded by applications for posts or for testimonials, and he never forgot faces. He carried the same qualities of good nature and kind manners into his consulting practice. He was sound in opinion and encouraging to patients, and he never failed in a scrupulous regard for the professional position of the practitioners who called him in. He was held in very real regard by a long series of his pupils."

In 1903, while still on the staff of St. Bartholomew's Hospital, Marsh was appointed professor of surgery in the University of Cambridge. The post had been in abeyance since the death of Sir George Murray Humphry, and the appointment of a surgeon in the first rank of practical clinicians to the vacant chair was very cordially approved of by most Cambridge men, albeit the new professor was not a Cambridge man. His academic position was immediately recognised by an honorary Fellowship and honorary degrees, and the new professor entered upon his interesting task with zeal. His enthusiasm for his subject found full scope, and the organisation and equipment of a surgical department in the then newly erected medical schools gave him congenial employment. For this department he made a fine collection of modern surgical instruments and added many appliances of historical interest, while his work as a teacher at Addenbrooke's Hospital won the respect and affection of all his pupils. His clear and unpedantic methods of imparting knowledge appealed in Cambridge as they had appealed in London, and Marsh quickly became a success. This was accentuated by election in 1907, on the resignation of Dr. Alexander Hill, to the Mastership of Downing College, which position he held at the time of his death.

From this time forward Marsh became closely associated with Cambridge University and municipal life, and prominent and successful consultant as he was in the metropolis the second half of his active career, so curiously and neatly divided into two periods, will be perhaps the one by which he will be best remembered. For outside his strictly professional work, his academic duties as a Regius professor and his administrative duties as "head of a house," he took from the first an active part in all that concerned the welfare of Cambridge. In him town and gown alike had an advocate for progress and a pioneer of reform. He was University member of the Cambridge town council and a member of the watch committee; he saw from the outset the vast significance of the boy scout movement, and helped that movement in every way; he was an honorary colonel in the East Anglian Division, R.A.M.C. Territorial Force, and faced with alacrity the work and responsibility which fell upon him on the outbreak of the war; he was conscientious in the discharge of his duties as a justice of the peace; and he was the mainspring of more than one notable movement in Cambridge for the improvement of public health.

Professor Howard Marsh's merits as a surgeon were widely recognised. The Orthopædic Society of New York appointed him a corresponding member in England, he was an honorary Fellow of the Royal Academy of Medicine in Ireland, and an ex-president of the Clinical Society of London. In the Royal College of Surgeons of England he occupied for some time a prominent position. He was a member of the Council from 1892 to 1908, and vice-president in 1898. He was also at different times examiner in anatomy and in surgery. He 1889 he was Hunterian professor of pathology and surgery in the College, and in 1902 delivered the Bradshaw lecture on Infective Arthritis, in which he showed that with the development of bacteriology the various conditions that might be included under this category had steadily increased, while he submitted these conditions to an exhaustive analysis.[1]

Professor Howard Marsh married, first, Jane, grand-daughter of the Right Hon. Spencer Perceval, Prime Minister and Chancellor of the Exchequer, who was killed in the Lobby of the House of Commons, and by her he had one son and one daughter; and, secondly, Violet Susan, daughter of the late Admiral Sir John Dalrymple Hay, Bart., G.C.B.

FRANÇOIS ALBERT DE THIERRY MOUILLOT, B.A., M.D. DUB.

BY the sudden death of Dr. François Albert de Thierry Mouillot on June 20th Harrogate loses a leading practitioner, and the medical profession a well-known representative of balneological work.

Dr. Mouillot was born in 1858 and was the eldest surviving son of the late Auguste M. C. Mouillot, of Rathfarnham, co. Dublin. At Trinity College, Dublin, he had a successful career, being senior moderator and gold medallist in mental and moral philosophy. He graduated in arts in 1877 and in medicine three years later, proceeding to the B.Ch. in 1882 and M.D. in 1896. He then became pathologist and registrar in the Birmingham General Hospital, and later settled in practice in Wexford. In 1894 he removed to Harrogate and rapidly built up an extensive practice. One of the earliest members of the Balneological and Climatological Society, he had an active share in its development, holding the office of co-secretary up to the time of fusion with the Royal Society of Medicine; and he became last year president of the Balneological Section. From the beginning of the war he acted as physician to the Grand Duchess George of Russia's hospitals for wounded soldiers in Harrogate, to which he gave much active and willing service. He was a past president of the Irish Schools and Graduates' Association and of his local division of the British Medical Association.

Dr. Mouillot was not a prolific writer, but from time to time he contributed to the medical journals papers which were invariably marked by shrewd common sense and clinical acumen. As a physician he was able and painstaking, a man of few words and infinite kindness. He set a high standard of professional conduct, and helped not a little by his example and precept in the difficult position of what may be termed "spa practice." In all that pertained to the welfare and development of the

[1] THE LANCET, Dec. 13th, 1902, p. 1603.

health resort in which he worked he was ever ready with sound advice and assistance in medical matters. As a man he was a charming companion, genial, and a racy raconteur. Even-tempered and broad-minded, he was never known to speak ill of anyone. His life was one of hard work, and his loss will be acutely felt by his numerous patients and wide circle of friends. He had for some years suffered from glycosuria, and the end came in a sudden and painless attack of cardiac syncope.

He leaves a widow, three daughters, and a son who holds a commission in the Indian Army and is now on active service in Egypt.

Correspondence.

"Audi alteram partem."

THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—The annotation in THE LANCET of June 26th dealing with Mr. A. J. Mathison's striking results is a welcome sign of freer breath in our times. It lifts into rational discussion the heresy of "a curability of pneumonia by simple medical means," and even to use your analogy, the "absurdity" of believing in a stereotyped formula for its cure. Strangely, that happy after-thought coincides with the demonstration by Wynn and others of the clinical efficiency of its vaccine, and with the greater lesson that Ehrlich was moved by the discovery of the Spirochæta P., not, as Koch had been moved by that of the Bacillus T., to any search for a toxin cure, but to a successful study of a metallic one. Syphilis remains, as before, amenable to drugs; and medicine has not called for any spirochætin. Yet tuberculosis and pneumococcus fever still remain untreated with them under spell of that higher quest. In 1905[1] the hospitality of your columns to "Principles of Treatment of Pneumonia" with a blank for the toxin cure, earned for the writer more of pity than assent. That blank has been filled; and he has not been slow to own[2] that the last to be added is the greater principle "rationally."

Granted that "all cases differ" in the pathogenic virulence of their soil, the microbes are still for ever the same. A stereotyped formula is hardly more absurd *a priori* for the most perishable of them than for the refractory. We have hitherto acted as though it were. The practical point, however, is in the harmlessness and in the success of Mathison's formula; and the practical question, how it acts. We know that Ehrlich's prescription holds its power from arsenic. This one, perhaps, from creosote; but we shall only know when we try. It had never occurred to me to try creosote, because pneumonia yielded without it. But in phthisis I had tried it in very large doses, probably more than sufficient for the pneumococcus, and too much for its host. Great is my regret that the non-publication of its clinical unsuccess has so long delayed the publication of Mr. Addyman Gardner's chemical study of its excretion. That labour will not have been wasted when the merits of creosote for pneumonia get their due investigation.

Iodide of potassium was prescribed at an early date for phthisis as well as pneumonia. Its heroic doses, which were subsequently tried, were soon discarded. Yet, in frequent small doses (hourly at first, and on the "sliding scale" principle of individual dosage) it is curative for early pneumonia. For early broncho-pneumonia, too, it is the best cure known to me. As Mathison also prescribes it, it must presumably do for his cases much of that it has done for my own single-handed (though I regard initial leeching, an abundance of citrates, and "no casein" as specially active adjuncts which I am not free to withhold for the patients' best chance). In fairness to them I could hardly suggest his trying to leave it out. The only legitimate experiment would be an extensive systematic trial of our two different plans, both of them successful and equally benign. If found to be equally life-saving his plan, being simpler, would be much the better one. The further question as to the relative value of iodine and of its salts can afford to wait.

I am, Sir, yours faithfully,

Upper Brook-street, W., June 27th, 1915. WILLIAM EWART.

[1] THE LANCET, vol. i., 1905, p. 138.
[2] Brit. Med. Jour., April 3rd, 1915.

THE RATIO OF KILLED TO WOUNDED IN THE PRESENT EUROPEAN WAR.

To the Editor of THE LANCET.

SIR,—With reference to the estimate of the ratio of killed to wounded which recently appeared in THE LANCET may I venture to express the opinion that the mode of calculation adopted does not appear to afford a quite accurate result. First, in the case of "other ranks" or non-commissioned officers and men no account appears to be taken of the number of killed among those described as "missing." Assuming that of the number of 52,617 returned as "missing," 35,617 are prisoners of war, 17,000 would still remain unaccounted for, and it is greatly to be feared that such would fall to be added to the number of killed. If from the above estimated number of prisoners 6500 be reckoned as wounded, the total number of wounded would thus be about 154,000. If these figures should prove approximately correct the totals thus arrived at would be: killed 64,000, wounded 154,000, a ratio of killed to wounded of rather over 41½ per cent.

Regarding the case of "officers": assuming that of the number of 1130 returned as "missing" 730 are prisoners of war, 400 would remain unaccounted for, and if such be added to the number of killed the total would thus be increased to about 3700. If from among the prisoners, say, 230 are reckoned as wounded, the total number of wounded would thus be about 6700—that is, killed about 3700, wounded about 6700, a ratio of killed to wounded of rather over 55 per cent.

In making the above estimates it will be noticed that allowance is made for the Germans having captured over 36,000 British prisoners, a number very much larger than their official statements have so far claimed, so that if there be an error in the above calculations it is deeply to be regretted that it would appear to lie in the direction of an under-estimate, rather than an over-estimate, of the fatal casualties.

I am, Sir, yours faithfully,

Glasgow, June 29th, 1915. CHAS. J. ANDERSON.

PS.—For reference the official figures are here appended:—

	Officers.	Other ranks.
Killed	3,327	47,015
Wounded	6,498	147,482
Missing	1,130	52,617
Total	10,955	247,114
Grand total	258,069	

ELECTRIC TREATMENT IN ARTERIO-SCLEROSIS AND CASES OF HIGH BLOOD PRESSURE.

To the Editor of THE LANCET.

SIR,—I have read with great interest Dr. W. Lyne Blight's lecture on Arterio-sclerosis as reported in THE LANCET of June 5th. In his excellent work on the therapeutics of the circulation, Sir Lauder Brunton gives as his opinion that by careful estimation of the blood pressure, and by keeping the tension at a proper level by diet, regimen and medicine, the cardiac failure or the cerebral apoplexy, which are common causes of death in advanced years, may be averted for years and the life not only prolonged greatly, but the senile decay or paralysis, which are so trying to the patients themselves and their friends, may be prevented. I fear this good advice is not followed as regularly as it should be, and our patients beyond middle age are not sufficiently warned in the words of Dr. Blight, that, although they may be feeling in good health, they should have their blood pressure taken from time to time, or they make one more of the number who may die suddenly by rupture of a cerebral vessel or thrombosis, &c.

After 28 years of practice I have long since given up relying on drugs alone to remedy this dangerous condition, and I quite agree with Dr. F. Howard Humphris that no article or monograph is complete without a reference to the value of suitable electric treatments. With the choice at my command of either high frequency (auto-conduction cage or auto-condensation couch), static, diathermy, ionisation, or Bergonié-faradic, I must confess that, like Dr. Lacquer (Archives of Roentgen Rays, February, 1907), I find "in advanced arterio-sclerosis little permanent benefit from high frequency."

With more or less advanced cases of arterial sclerosis and its attendant high blood pressure (especially in plethoric cases), I have found a course of ionisation (of lithium iodide) and a short course (a week or less generally) of carefully modified Bergonié-faradic treatment has not failed me, so far, in reducing a blood pressure of, say, 160 mm. or 200 mm. down to 120 or 160 mm. respectively as the case may be, and the result is usually maintained for months, which is equally important. By reference to my case book I see that a patient losing 40 mm. blood pressure in four such Bergonié daily treatments lost only 11 oz. weight in all in a case in which loss of weight was not desired, and that after the lapse of over three months the patient's blood pressure had not risen 5 mm. This seems to me as good as can be expected, and certainly exceeds what I have obtained from drugs alone.

I am, Sir, yours faithfully,

Bournemouth, June 25th, 1915. G. HERBERT RUTTER.

PROCEEDINGS OF THE MEDICAL ASSOCIATION OF THE ISTHMIAN CANAL ZONE.

To the Editor of THE LANCET.

SIR,—By direction of the President of the General Council of Medical Education and Registration I have to inform you that this Council has received from the Privy Council a copy of the Proceedings of the Medical Association of the Isthmian Canal Zone for the half year October, 1912, to March, 1913, which may be seen at this office by any medical practitioner who may be interested in the matter.

I am, Sir, yours faithfully,

299, Oxford-street, London, W., June 25th, 1915. A. J. COCKINGTON, Acting Registrar.

The War.

THE CASUALTY LIST.

THE following names of medical men appear in the casualty lists published since our last issue:—

Killed.—Lieutenant G. M. Fleming, R.A.M.C.; Lieutenant L. P. Jones, 9th Royal Berks Regiment, was a medical student of Oxford and St. Bartholomew's Hospital.

Died of Wounds.—Second-Lieutenant R. B. Buchanan, 5th Royal Scots Fusiliers, had passed with honours all but the final examination in medicine at the University of Edinburgh and on the outbreak of war was gazetted lieutenant in the Royal Army Medical Corps, but finding he could not be sent on active service until he was fully qualified was transferred on his own application to the Royal Scots Fusiliers.

Wounded.—Lieutenant J. Cowan, Lieutenant R. D. Brownson, attached 1st Battalion Norfolk Regiment, Lieutenant W. H. Shephard, Temporary Lieutenant A. J. McC. C. Morrison, attached R.F.A., all of the R.A.M.C. Lieutenant H. Seddon, attached 1st West Lancs Regiment (T.F.), of the R.A.M.C. (T.F.). Surgeon F. H. Rees, R.N., Drake Battalion.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men are to be added to our lists of those who have fallen during the war:—Lieutenant E. L. Frost, only son of Dr. Edmund Frost, of Eastbourne; Private W. Y. Dawson, Australian Imperial Force, eldest son of Dr. Yelverton Dawson, of Southbourne and Mallow; Captain R. H. Gallagher, son of the late Captain J. Gallagher, I.M.S., in France, as the result of a motor accident; Captain Philip Shepheard, eldest son of Dr. Philip C. Shepheard, Aylsham; Lieutenant E. K. Colbourne, of Victoria, B.C., third son of Dr. L. Colbourne, of Beckenham; Mr. C. D. B. Whitby, eldest son of Dr. C. J. Whitby, of Bath, while a prisoner of war, from wounds received in action; Lieutenant E. J. K. P. Pigott, 1st Royal Irish Regiment, son of Dr. F. K. Pigott, of Shrewsbury; and Second Lieutenant C. N. Rundle, eldest son of Lieutenant-Colonel C. S. Rundle, I.M.S. (retired), of St. Heliers.

Midshipman Geoffrey C. Harold, who lost his life when the *Hogue* was torpedoed last September, was the son of Dr. John Harold, of London.

NATIONAL REGISTRATION AND THE SUPPLY OF MEDICAL OFFICERS TO THE SERVICES.

The answers which must be rendered to the official inquiry in connexion with the National Registration Bill should at once clear up, first, the general question as to whether there is a dearth of medical men with our naval and military forces; and secondly, how that dearth, if any, can best be filled by making use of medical men still in civilian employment and by re-sorting in an economical way the duties of those already with the forces. For it must be admitted that there is no great reserve of medical men to draw upon, and however paramount the needs of the army may be, the civilian population, upon which the energies of the fighting forces are ultimately based, must be maintained in good health. Nine-tenths of the men upon the Medical Register for practical purposes fall within the scope of the National Registration Bill, and every man on the roll will have to

state the nature of his business, the number of his dependents, if any, and whether he is able to perform any other work than the professional work on which he is for the present employed. Such a register of medical men ought to be of the greatest value to the authorities of the navy and army. It is understood that the Register will not be open to public inspection, but local authorities will have cognisance of its results.

The opportunity of stating their individual positions and ability to give assistance to the nation, over and above such as is being rendered by their civilian work, will, we know, be seized with alacrity by many medical men, and we look forward with confidence to some better adjustment alike of the help offered and of the help accepted than has yet been possible.

The Scottish Medical Service Emergency Committee.

This energetic committee has addressed, with the approval of the War Office, a manifesto to the medical profession in Scotland. The manifesto recognises, we are glad to see, the idea that recruiting for the Forces and the organisation of civil practice can go hand-in-hand, while the War Office have met the efforts of the Committee in a very practical manner by arranging to inform it with regard to the dates from which fresh drafts will be wanted. The temporary transfer of patients from those who go to those who stay behind will be the subject of delicate negotiation, and will entail upon medical men considerable mutual confidence in the honour and generosity of their colleagues. We do not, however, anticipate that difficulties will arise here, though we believe that the General Medical Council would assume discretion to interfere where any practitioner, holding patients in trust for an absentee brother practitioner, was proved to have violated his trust. The Committee strongly recommends every practitioner who joins the army to nominate some person, preferably a business man, to act on his behalf in those matters of business concerning his practice which may emerge during his absence.

The divisions of the British Medical Association in Scotland will be employed as the local administrative units in the work of the Scottish Medical Service Emergency Committee, which is working with the Association, while relying on the unanimous opinion both of those who are in touch with the War Office and of the working members of the profession, that a single central body should, in Scotland, undertake the general direction of arrangements. The Committee is now prepared to give advice to any inquirers, and its wide experience, which may be judged from its personnel (see THE LANCET last week, p. 1347), should make its collective opinion definitive. All such inquiries may now be addressed to the Convener, Emergency Committee, Royal College of Physicians, Edinburgh.

AN AMERICAN MEDICAL UNIT OF THE BRITISH EXPEDITIONARY FORCES.

There arrived in England from the United States last week a complete unit known as the Chicago Unit, whose services have been accepted by the War Office as the full medical and nursing establishment for a general hospital of 1040 beds. The unit consists of 32 medical men and the nursing staff of 75, including the matron. The medical staff includes, besides physicians and surgeons, specialists in eye, nose, throat, and ear, and oral surgery, a radiographer, and a pathologist. The medical men of this unit have been carefully selected out of several hundreds of applicants, the senior officers being all men of established position, while the nurses are all fully trained and have served in large general hospitals in the United States. The junior members of the Chicago Unit were temporarily distributed among various general military hospitals in London on the day of their arrival, pending the departure of the unit to its allotted sphere of action. It is planned to keep the hospital corps intact for at least six months, its subsequent permanency being assured by the large waiting list of American medical men and nurses ready to fill up the places of those who may then wish to retire. All members of the unit have been inoculated, in addition to the customary small-pox and typhoid vaccination, with the new Plotz vaccine against typhus fever supplied from the Mount Sinai Hospital, New York.

THE DENTAL NEEDS OF THE ARMY.

The importance of proper dental service in the army cannot be too strongly insisted on, and there are signs that it is beginning to receive something like adequate attention. Quite a number of dentists have been sent out to the front, and six well-known dentists have been appointed dental surgeons on the King George Hospital staff. Dentistry, however, is, after all, only a department of surgery, and the efforts that are being made in some quarters to advocate the formation of a Royal Army Dental Corps analogous with, but distinct from, the Royal Army Medical Corps are hardly judicious. On the same grounds it would be necessary to have a Royal Army Laryngological or Ophthalmological Corps. There is no real reason why every member of the Royal Army Medical Corps should not be called on to possess a knowledge of dental surgery equal in degree to his knowledge of other surgical specialties, and this could be done, as was pointed out in our columns by Mr. Morton Smale so far back as March 12th, 1910, if the help of experienced dental teachers was sought. Dentists might also be appointed at a salary at all depôts and be required to treat all soldiers needing their services. These with adequate assistance could also provide dentures and obturators and do the mechanical work of dentistry generally at a stipulated cost, in much the same way as artificial legs and arms are provided. Such a plan, if properly worked out and organised, would be in every way preferable to the formation of a Royal Army Dental Corps.

QUEEN ALEXANDRA AND THE BRIGHTON MILITARY HOSPITALS.—Queen Alexandra paid an informal visit on June 25th to Brighton to inspect some of the military hospitals there. Her Majesty, after her arrival at Brighton, motored to Aldrington Basin, a part of Shoreham Harbour, and there inspected the yacht fitted out as a hospital ship by the Marquis of Zetland, which is shortly proceeding to the Dardanelles. The Queen was received on board by Flight-Commander Montagu Grahame-White, who is in command, and took luncheon on board. She then visited King Manoel's convalescent home for wounded soldiers in Eastern-terrace, King's Cliff, where she was received by King Manoel and his Consort. Another convalescent home for officers and Lady Dudley's Red Cross Convalescent Home, both near by—in Percival-terrace—were next inspected, and from here the Queen visited the wounded Indian soldiers at the Royal Pavilion. Queen Alexandra is honorary Colonel of a Gurkha regiment, and her interest in these soldiers was very marked,

particularly two little Gurkha boys, brothers, who were wounded by the same shell. Queen Alexandra and her suite took tea with the hospital staff in the grounds, and the Queen expressed her warm approval of the arrangements at the hospital.

BELGIAN RED CROSS FUND.—A matinée, under the patronage of Queen Amélie of Portugal, the French Ambassador, the Belgian Minister and Madame Hymans, the Right Rev. the Bishop Auxiliary of Malines, Monsignor Carton de Wiart, Baron Goffinet, the Princess of Monaco, the Duchess of Norfolk, and many other distinguished persons, will take place at the Ambassadors Theatre on Friday, July 9th, at 3 P.M., in aid of the Belgian Red Cross Fund, and to enable the Belgian clergy to minister to the sick and wounded. Donations, however small, to the fund will be welcomed and acknowledged by Lady Mary Howard, 59, Egerton-crescent, London, S.W.

R.A.M.C. MEDICAL SOCIETY OF THE CAMBRIDGE HOSPITAL, ALDERSHOT.—This is a new society, consisting of some 50 members of the Royal Army Medical Corps, whose meetings receive an adequate variety through the constant going to or returning from the front of its members. Major A. Lapthorn Smith has been elected chairman. At the meeting on June 16th some very interesting remarks were made by Lieutenant F. G. Simpson, R.A.M.C., who has lately returned from a general hospital in France. He said that gas poisoning could be roughly grouped into three degrees of severity: (1) Great spasm and tumefaction of the whole respiratory tract, causing death in a few hours; (2) cases showing great cyanosis and developing capillary bronchitis or broncho-pneumonia; and (3) slightly gassed cases, but accompanied by much prostration. In regard to treatment, the speaker laid stress on the value of oxygen. It was practically useless, he said, given in the old-fashioned way by means of a funnel. To be of any use oxygen must be administered in a very concentrated form—e.g., through a nitrous-oxide apparatus with bag and face-piece, or by means of a large cardboard hatbox inverted over the head, with the oxygen tube leading into it, or thirdly by the use of a milliner's large paper bag placed over the head, into which the oxygen was conducted. The bag could be taken off and placed with its opening up every now and then to allow the carbon dioxide exhaled by the patient to escape. Oxygen by this concentrated method had sometimes been given for 30 hours continuously to enable the patient to turn the corner. Posture also was of great importance in treatment; the patients should be held up by the feet at the earliest possible moment to allow the heavy gas to roll out of the air-passages. A certain amount of secretion would come with it. The speaker did not favour atropine. He had never seen it afford relief and it certainly increased the pulse-rate and caused the dry swollen excoriated tongue to become more parched. He did not think that moist steam relieved, but he strongly advocated patients being nursed in the open, or in an airy tent. Most of the hotels used as hospitals lacked ventilation. Alcohol and strychnine were of some benefit, and counter irritation by large mustard pastes applied to the whole thorax was very efficacious. Post mortem, the lungs were full of fluid and could be squeezed like a sponge. The mucous membranes had the appearance of red velvet, and the surface of the lungs generally exhibited large emphysematous blebs. Physical signs were very variable. An interesting phenomenon of auscultation was a universal pleuritic rubbing often heard, and probably due to the before-mentioned emphysematous blebs. The systolic blood pressure was almost invariably found to be below 100 mm., and this might account for the feeling of extreme prostration. It must not be forgotten that gastric symptoms frequently supervened, due to swallowing of the gas. The eyes showed severe conjunctivitis, but the speaker had not seen any corneal ulceration arising from the gas.

At the meeting on June 18th Colonel Sir Arbuthnot Lane opened a discussion on Compound Comminuted Fractures, in which he strongly urged the plating of these fractures, but pointed out that it was quite improper to use very small plates, and attempting to join a number of small fragments, instead of leaving the small fragments to take care of themselves and applying a very long and strong plate to the two principal fragments. Where there were many fragments he advocated the elimination of shortening by traction weights, so that when the long fragments were plated the leg would be of normal length, but there would be a space of several inches, perhaps, which would be filled up with a callus, aided by loose fragments, which acted as grafts to help the process. When there were only the two fragments he advised the bending of the broken thigh until the two ends could be hooked together and then the bone could be straightened by leverage, instead of by the use of brute force in traction. Apart from cases suitable for plates, he thought that we should do as little as possible after making every effort to remove foreign bodies and obtain asepsis. Major Smith said the views expressed by Sir Arbuthnot Lane were those held by most of the great French surgeons whom he had met near the firing line in northern France. At the Lady Wemyss Hospital he was struck by the remarkably rapid healing of compound comminuted fractures, which was greatly helped by the fact that there was a large park surrounding the château into which all the patients walked or were carried about 10 A.M., and where they remained until 6 P.M. The wards being thus absolutely emptied all day could be thoroughly cleaned. Another reason was possibly the very short space of time elapsing between the wounding and the putting into splints. A man, for instance, would be wounded at 4 A.M., received the antitetanic injection at 4.15 A.M.; was temporarily dressed and splinted at 5 A.M.; taken to the clearing hospital between 8 A.M. and 12 A.M.; and the hospital ambulance fetched him from 1 P.M. to 2 P.M. He was bathed at the bath-house, clean clothing was put on, and he was X rayed before 3 P.M., in many cases shrapnel and bullets removed, and the patient was comfortably in bed before 4, or 12 hours after the injury. Pieces of bone which were completely detached were removed, but any which were connected with the circulation even by a piece of fascia or periosteum were allowed to remain, and the X ray showed a few weeks later that they were all splinted together by a large callus. It seemed evident that if the limb was kept extended to its normal length, any space remaining between the two fragments would be filled in by the ossification of fibrous lymph. All the French medical inspector-generals laid great stress upon the importance of getting the patients to move their fingers and toes almost from the very beginning, especially where there had been slight injury to the nerves. In most of the hospitals slowly interrupted faradism was used to exercise the muscles. Patients were also put early to cutting grass and similar light exercises.

WAR LECTURES AT THE ROYAL SOCIETY OF ARTS.—The council of the Royal Society of Arts have arranged that Professor Vivian B. Lewes shall give three lectures on "Modern Munitions of War" at 4.30 P.M. on Wednesday afternoons, July 7th, 14th, and 21st. The first lecture on July 7th will deal with "Guns and Propellants"; the second on July 14th with "Mines, Shells, and High Explosives"; and the third on July 21st with "Poison Gases and Incendiary Bombs." The course will be under the Fothergill Trust. Fellows of the society can admit their friends personally or by the usual tickets. Fellows requiring further tickets can apply to the secretary. Tickets will also be issued gratuitously to any persons interested on application to the secretary, Sir Henry Trueman Wood, at the offices of the society, John-street, Adelphi, W.C.

THE TREATMENT OF BRITISH PRISONERS BY THE GERMANS.—A special correspondent of the *Times*, writing from Roosendaal, Holland, on June 28th, describing the enthusiastic welcome accorded by the Dutch to the released British prisoners, of which the German official figures are, wounded 200, officers 49, medical service men 301, says: "Not one had a good word to say for the German food. Some brought a ration of bread for my inspection, their feelings—for it was a hard black substance—being too strong for expression. Many of these men came from Sennelager, near Paderborn, in Westphalia, where they had been prisoners since August and September, some having been captured at Mons, Landrecies, and Ligny. All reported that they had been subjected to bad treatment on capture. The Germans insulted them, stripped them in some instances naked, and more than once gave overcoats and cardigan jackets belonging to the prisoners to their own wounded. They struck the prisoners with the butt-ends of rifles. Their journey to Sennelager, crowded in stifling cattle trucks, was made harder by misreprentations.

One party were represented by a wounded German as comrades of British who were said to have gouged out German soldiers' eyes, used dum-dum bullets, and otherwise committed atrocities. This had the effect of infuriating German popular feeling against the English. When some of our men arrived at Sennelager, where there were three camps with thousands of prisoners, they lay exposed beneath the sky for days before they were afforded shelter. At first they had inadequate tents, but were afterwards housed in huts. They greatly appreciated a concession made more recently which allowed them to receive letters and parcels from home. These parcels, many of the men assured me, were absolutely invaluable. The general tendency, as reported by those with whom I conversed, is towards amelioration of the treatment of prisoners, several of whom said there was a great difference between the present German attitude and that at the beginning of the war. So far as they could see, the war fever has passed away and the desire for peace seems general." Thirty officers of the Royal Army Medical Corps were among the released officers.

THE PROFESSIONAL CLASSES WAR RELIEF COUNCIL.—This body, to the foundation and development of which we have referred on various occasions, has now published a summary of its six months' work. Applications for employment or relief have numbered 2000, of which 1600 have been dealt with, 100 referred to other charitable societies, and 300 rejected as not coming within the scope of the council's work. The services rendered consist of introductions to employment, subsidised employment, training, hospitality, loans, medical help, subsidised boarding, gifts in kind, education, &c. When applicants have not come within the scope of the council's work the council has often been able to direct them to quarters where assistance has been rendered. The assistance rendered to secure the continuance of education that would otherwise have had to be dropped through the war is a work of the greatest value, not only to the individual, but to the community. Training has been arranged for in 33 cases in domestic economy, cookery, secretarial work, musical teaching, medicine, bank work, nursing and maternity nursing, social service, dispensing, gardening, and motoring, and of these four persons are now in remunerative employment. The number of maternity patients who have passed through the home to the end of April was 27, and in addition five had been helped at their own home. Four exhibitions have been organised to enable artists to exhibit their work, 161 artists having been materially assisted by 310 sales and several orders have been obtained. For musicians 1000 engagements have been obtained, 66 concerts have been given in camps, 122 in hospitals, and 112 in schools, &c. Funds are urgently needed to continue the excellent work and may be sent to Mrs. Gotto, honorary secretary, 13 and 14, Prince's-gate, London, S.W.

NURSES FOR THE WOUNDED ALLIES RELIEF COMMITTEE'S FRENCH HOSPITAL.—On Tuesday, June 29th, six nurses—viz., Mrs. Davies, Miss E. L. Gilchrist, Miss E. D. Harris, Miss M. A. Harris, Miss E. E. Mulville, and Miss E. O. Woodward—left England to take up duties at the Wounded Allies Relief Committee Hospital (Hôpital Militaire Anglais), Limoges, France.

EPSOM COLLEGE AND THE WAR.—At the annual meeting of the governors of Epsom College on June 25th Sir Henry Morris gave some interesting figures. Four masters and 400 old boys had gone on active service, of whom 18 had individually distinguished themselves by being mentioned in despatches or gaining the D.S.O. or the Military Cross. Thirteen had been killed or died from wounds and three were prisoners.

THE ORDER OF ST. JOHN OF JERUSALEM.—This venerable order held its annual festival in St. John's Church, Clerkenwell, on June 24th. The roll of the departed, including 46 who have perished in the present war, was read. Over 8000 men and 400 nurses are now on war service.

EMPLOYMENT FOR NURSES.—Conditions of service for the new war hospitals may be obtained by nurses who hold certificates for three years' training by application to the Matron in Chief, Q.A.I.M.N.S., War Office, S.W.

THE MCCORMACK BROOK WHEELED STRETCHER.—Several correspondents having written to ask about this stretcher, referred to by Captain S. J. A. H. Walshe, R.A.M.C., in his article on Six Months with the Bearer Division of a Field Ambulance at the Front, published in THE LANCET of June 5th, p. 1194, Captain Walshe informs us that it is an army pattern and is described and figured (p. 157, Fig. 44) in the last edition (1911) of the "R.A.M.C. Training," price 9*d*. The stretcher is likely to be seen at most military general hospitals at home, and almost certainly at any ordnance store.

THE ALLIED FORCES BASE HOSPITAL, ETAPLES.—Queen Alexandra has given her patronage to the matinée to be given on Friday, July 23rd, at 3 P.M., at His Majesty's Theatre, which has been kindly lent by Sir Herbert Tree, when a dramatisation of *Peter Ibbetson*, preceded by a one-act play by Lady Kathleen Hastings, will be presented.

FREE SPA TREATMENT FOR OFFICERS.—We are asked to state that the administration of the well-known French spa, Brides-les-Bains, are offering British naval and military officers free treatment and use of the baths and springs. Brides-les-Bains, the French Carlsbad, is a delightful summer resort, situated in the Upper Savoy at an altitude of about 2000 feet. It has good hotels, a fine casino, and offers numerous outdoor attractions. Communications may be addressed to the Administration de Bride-les-Bains, 12, Rue Neuve, Lyons, France.

THE PORT OF LONDON AUTHORITY AND THE WOUNDED.—On June 29th the *Conservator* steamer, belonging to the Port of London Authority, made its first river trip at 2 P.M. from the Temple Pier carrying wounded sailors and soldiers from the King George Hospital. Weather permitting, similar trips are to be made daily, except Saturdays and Sundays, during the summer.

THE LORD ROBERTS MEMORIAL WORKSHOPS FOR DISABLED SOLDIERS AND SAILORS.—On June 22nd Queen Alexandra, accompanied by the Princess Victoria, paid a visit to the Lord Roberts Memorial Workshops, Britannia-road, Fulham, and was greatly gratified at results obtained in restoring the injured men to a considerable degree of efficiency.

THE death occurred on June 27th of a young woman who was injured by a shell fragment during the bombardment of the Hartlepools last December. She is the 121st victim.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful:—

Surgery.—J. Braun (Sections I. and II.), Geneva and Middlesex Hospital; A. Butterfield (Sections I. and II.), Durham; F. W Chamberlain (Section I.), Middlesex Hospital; K. M. Dyott (Section I.), London Hospital; C. J. G. Exley (Sections I. and II.), University College Hospital and Leeds; J. D. Ferguson (Sections I. and II.), Leeds; S. C. Ghose-Dastidar (Sections I. and II.), Calcutta and St. Mary's Hospital; S. Joubert (Sections I. and II.), Amsterdam; and J. C. Lee (Section II.), McGill.

Medicine.—A. Z. Abushady (Sections I. and II.), St. George's Hospital; W. Andrew (Sections I. and II.), King's College Hospital; L. Baumgarten (Sections I. and II.), Berne and London Hospital; J. Braun (Sections I. and II.), Geneva and Middlesex Hospital; F. W. Chamberlain (Sections I. and II.), Middlesex Hospital; C. J. G. Exley (Section II.), University College Hospital and Leeds; S. C. Ghose-Dastidar (Sections I. and II.), Calcutta and St. Mary's Hospital; S. Joubert (Sections I. and II.), Amsterdam; W. F. Matthews (Section II.), King's College Hospital; A. L. Robinson (Sections I. and II.), University College Hospital; and G. C. N. Younger (Section I.), Middlesex Hospital.

Forensic Medicine.—J. Braun, Geneva and Middlesex Hospital; K. M. Dyott, London Hospital; S. C. Ghose-Dastidar, Calcutta and St. Mary's Hospital; S. Joubert, Amsterdam; and C. A. Mortlock-Brown, Royal Free Hospital.

Midwifery.—J. Braun, Geneva and Middlesex Hospital; S. C. Ghose-Dastidar, Calcutta and St. Mary's Hospital; L. S. Goss, Middlesex Hospital; S. Joubert, Amsterdam; and E. E. Samaraweera and T. J. Thomas, King's College Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. Braun, A. Butterfield, C. J. G. Exley, J. D. Ferguson, S. C. Ghose-Dastidar, S. Joubert, and J. C. Lee.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation held on June 22nd the following degrees were conferred:—

Doctor of Medicine.—Samuel Thomas Cochrane, Arthur Gibson Dunn, Friederike Rahtkens, and Lionel Langford Westrope.
Bachelor of Medicine (M.B.).—Reginald Arthur Hooper, Edward Ek Dun Lau, Leo Magee, Andrew Govan McFarlane, John Eric Measham, John Dover Proud, Frank Blair Robson, Charles Gordon Strachan, and Alexander Gordon Taylor.
Bachelor of Surgery (B.S.).—Edward Ek Dun Lau, Leo Magee, John Eric Measham, John Dover Proud, Frank Blair Robson, Charles Gordon Strachan, and Alexander Gordon Taylor.
Bachelor of Hygiene (B.Hy.).—Arthur King.

At examinations held recently the following candidates were successful:—

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Charles Nathaniel Armstrong, Frederick Joseph Armstrong, Paige Canney Arnold (second-class honours), Oliver Colville, Cecil Colville Carr, Robert Alexander McKinnel Dickson, Robert Davison, John Matthew DeLacey, Samuel Foskett, William Devereux Forrest, Frederick Temperley Gass, Alfred Stoddart Graham, Alec Hanson, George Hall, John Hetherington, George Hurrell (second-class honours), Hamed Kamel, Thomas Norman Vickers Potts, Raymond Forster Pratt, Sydney James Craufurd Smith, and Angus Hedley Whyte.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Anatomy and Physiology.—Douglas George Patrick Bell (second-class honours), Wallace Alexander Freedman, Alexander Thomas Harrison, Douglas Ethelbert Hearn, Mary Kathleen Henegan, William Arthur Jaques, William Irving Fitzgerald Powell, and William Edward Mandell Wardill (second-class honours).

THIRD EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.—James Allan Berry, Norman Braithwaite, William Duncan, Stephanie Patricia Laline Hunte Taylour Daniel, Ernest Craig Dunlop (second-class honours), Mordecai Jacob Erdberg, Reginald Hunter, James Dixon Johnson, Malcolm Cyril Joynt, Harold Mason Leete (second-class honours), Freda Newman, Ralph Roylance Scott, Thomas Wilson Shaw, and Kamel Ibrahim Shalaby.

LICENCE IN DENTAL SURGERY (L.D.S.).

First Examination: Chemistry and Physics.—Eric Waddington Manners, Arthur Ernest Murray, and Fred. Wilkinson.
Third Examination: Anatomy, Physiology, and Histology; Dental Anatomy, Dental Histology, and Dental Materia Medica.—George Carl Adie, William Hall, and Harold Armstrong Metcalfe.
Diploma in Public Health (D.P.H.).—Arthur King.
Licence in Dental Surgery (L.D.S.).—Aaron Gompertz Marks.

UNIVERSITY OF SHEFFIELD.—At examinations held recently the following candidates were successful:—

Third Examination for the M.B., Ch.B. Degrees.—Frederick Gamm, Lydia M. Henry, George K. E. Inman, Florence E. Millard, and William Sharrard.
First Examination for the M.B., Ch.B. Degrees.—Hyman Finklestone (distinction in chemistry), Raymond E. Ford, Dorothy E. Mathews, Reginald E. Pleasance, Frederick Roper, and Frederick L. Smith.
Diploma in Public Health.—Hanway R. Beale (with distinction in chemistry).

THE VITAL STATISTICS OF SCOTLAND.—From the New Series of Reports on the Vital Statistics of Scotland by the Registrar-General we learn that there is every reason to hope that in the early future the vital statistics of Scotland will be rendered in every respect comparable with those of England. One of the chief discrepancies at present lies in the fact that in the Scottish reports deaths occurring in hospitals and institutions are not separated from those occurring in the homes of the people, while in England they are so segregated, a fact obviously bearing on the mortality in the aggregate, seeing that in urban areas half the male deaths occur in such institutions, where it may reasonably be conceived that exceptional care and treatment are received. The Scottish birth-rate, like the English, has fallen steadily in recent years. The infant mortality in 1913 was 109·6 per 1000, as against 108 in England. Of causes of death enteric fever caused 4 per 100,000 in 1913. Scarlet fever showed (as in England also) a remarkable reduction in recent years; in 1913 it accounted for 12 per 100,000. Diphtheria and croup in 1912 and 1913 (taken together) accounted for 17 per 100,000. The decrease in tuberculosis mortality has been remarkable, the pulmonary form in 1913 showing only 108 per 100,000, the lowest rate on record. Malignant disease, on the other hand, as in other parts of the United Kingdom, has shown a progressive increase for many years past, being equal in 1913 to 110 per 100,000. This interesting series of reports will be more fully reviewed in a later issue.

Surgeon-Major S. C. Noble, V.D., J.P., Kendal, has been appointed by the Lord Lieutenant a Deputy Lieutenant for the county of Westmorland.

THE RESEARCH DEFENCE SOCIETY.—The annual general meeting of this society was held at the offices of the Royal Society of Medicine on Wednesday last, June 30th, Major-General the Hon. Sir Reginald Talbot presiding. Viscount Knutsford, chairman of the committee, moved the adoption of the report, which showed that good educational work had been done during the year. With the help of the War Office the society had distributed about 350,000 copies of a four-page leaflet, "Protection against Typhoid Fever." The leaflet had been translated into French, and 20,000 copies had been distributed in France. The financial report showed a balance in hand in spite of a falling off of subscriptions due to the war. Dr. F. M. Sandwith seconded the adoption of the report, which was carried. Sir William Osler proposed the re-election of the officers of the society, and in doing so remarked that we had been ten months at war without any epidemic among the troops, a remarkable testimony to the efficacy of scientific medicine, founded upon research. After the business of the meeting Dr. Andrew Balfour gave a demonstration with the kinematograph, illustrating protective treatment against typhoid fever and cholera.

THE NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED.—At the annual conference of the National Association for the Feeble-minded Sir Bryan Donkin presided last week over a meeting of 600 representatives of London and provincial authorities, including many medical officials. The Lord Mayor of London, Sir Charles Johnston, having pointed out that the war must leave its neurotic legacy behind it, Sir Bryan Donkin opened the conference by stating its entirely practical aims. Many interesting papers were read which will be published immediately at the offices of the association, Denison House, 296, Vauxhall Bridge-road, London, S.W.

SOCIETY FOR THE STUDY OF INEBRIETY.—At the next meeting of this society, which will he held at 11, Chandos-street, on July 13th, at 4 P.M., Major Leonard Darwin, President of the Eugenics Education Society, will open a discussion on Alcoholism and Eugenics. The sixth Norman Kerr Memorial Lecture will be delivered by Sir William J. Collins, K.C.V.O., on Oct. 12th, his subject being the Ethics and Law of Drug and Alcohol Addiction.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Duty on Spirits Used in Hospitals.

SOME opposition was offered on Tuesday, June 29th, in the House of Commons to the proposal to introduce into the Finance (No. 2) Bill a clause to relax the duty in the case of spirits used in hospitals. As a consequence the clause was not proceeded with on the Committee stage, but if certain objections can be met it will be proposed again on the report stage.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 23RD.

Medical Consultants at Royal Naval Hospitals.

Sir JOHN LONSDALE asked the Secretary to the Admiralty whether the contracts with the six medical men receiving £5000 a year each as consultants at Royal naval hospitals had been terminated.—Mr. MACNAMARA replied: The engagements in question had been terminated from June 19th and we are about to enter into a new arrangement.

Medical Consultants at Military Hospitals.

Sir JOHN LONSDALE asked the Financial Secretary to the War Office how many civilian surgeons or physicians were now employed by the War Office in a consultative capacity at military hospitals at home and abroad; upon what terms as to remuneration were they engaged; whether the working staffs of the hospitals were now fully adequate for all requirements; and whether it was necessary to continue the engagements of all these consultants attached to hospitals on the continent.—Mr. FORSTER said, in reply: The number employed is 24. The pay is that of the rank held. The working staffs of the hospitals are fully adequate, but the services of the consultants are necessary to coördinate work in their specialties, and they also give the benefit of their advice and skill in such cases as may demand them. Their employment has been most beneficial to the sick and wounded, and

as the Director-General of Army Medical Services considers their employment as essential to the successful working of the medical arrangements, it is not proposed to terminate their engagements.

Territorial Medical Officers.

Sir JOHN LONSDALE asked the Financial Secretary to the War Office whether any decision had been arrived at with regard to an increase in the pay of officers of the Royal Army Medical Corps (Territorial Force) so as to make their emoluments correspond with those of medical officers of the Regular and new armies.—Mr. FORSTER answered: I regret that I am not yet in a position to make a statement on this subject.

Pay of Indian Medical Service at the Front.

Sir PHILIP MAGNUS asked the Secretary of State for India what was the exact amount of pay to officers in the Indian Medical Service now employed with the field ambulances of the Expeditionary Force in France, and by how much their pay had been increased since it was stated that the rate of pay in future would be somewhat in excess of unemployed pay; and whether any of the other grievances, of which the Indian medical officers at that time complained, had been redressed.—Mr. CHAMBERLAIN replied: A lieutenant in the Indian Medical Service of two years' service employed with the Expeditionary Force in France, who holds no specific appointment, receives under the orders recently issued grade pay of Rs.350 a month and staff pay of Rs.100 a month, or Rs.450 in all as against unemployed pay of Rs.420 a month. A lieutenant of less than two years' service likewise receives Rs.450 if at the time he left India he drew staff pay. Otherwise he receives unemployed pay. A captain of less than five years' standing who holds no specific appointment in France receives grade pay of Rs.400 a month and staff pay of Rs.100 a month, or Rs.500 a month in all, as against unemployed pay of Rs.475 a month. These rates are exclusive of exchange compensation allowance. With regard to the second part of the question, the grievances represented in my honourable friend's questions of April 27th have been remedied by the decision of the War Office described in answer to those questions.

Treatment of Wounded in the War.

On the motion for the third reading of the Consolidated Fund Bill,

Mr. W. ROCH called attention to several points in connexion with the treatment of the wounded both in Flanders and the Dardanelles. He suggested, in the first place, that there was an insufficiency of evacuation hospitals close behind the lines. He was told that it was of the utmost importance that the men who were wounded should be treated as quickly as possible. There should be many more of those evacuation hospitals than there were in France at the present moment. They should be much better equipped with operating theatres and other appliances, and they ought to be more sanitary and hygienic in their nature. He was told that in many of the hospitals to which men were taken at the present moment there were three classes of cases by which the right honourable gentleman (the Under Secretary for War) could test and indeed secure absolute and certain proof that the equipment and number of these hospitals were not sufficient. If the wounded men were attended to at once much suffering might be avoided. Let him take the first class of cases—compound fractures. If they were kept thoroughly clean and bound up at once, the men could with perfect safety be sent straight back to London, and there would be no need for amputation in most cases. He was told that in many hospitals such cases had been received, and they afforded a test by which the right honourable gentleman could test the working of the present system. The second method by which he could test the point whether the evacuation hospitals were sufficient was that he could inquire of any London hospital as to the number of septic wounds found on the men when they returned to this country. He was informed that if a case was properly dealt with there should not be a single instance of a man coming back with a septic wound. Then he came to the third class of cases—abdominal wounds. In these cases the only chance of recovery was for the man to be dealt with within a few hours of the time when he was wounded. The right honourable gentleman could again test the working of the system by ascertaining from the London hospitals the number of fatal cases which had resulted from abdominal wounds. He believed that a most interesting statement was made by Dr. Suter, who was at Antwerp, to the effect that as he was able to deal with a number of abdominal wounds almost as soon as the men were hit, the percentage of fatal cases was almost infinitesimal. In the experience of the London hospitals in these three classes of cases, the right honourable gentleman had a perfect means of testing whether the working of the present system was all that it should be. The suggestion which he had been asked to bring before the right honourable gentleman by people who had many months' experience in these matters, was that he should multiply as far as possible the number of these evacuation hospitals and improve their equipment, and then the classes of cases to which he referred would not arise in anything like the proportion as they did at the present moment. He also desired to refer to a matter of general organisation. It was suggested that the present system of organisation of the Royal Army Medical Corps was inelastic and rather too tightly linked with the existing practice of the division. He was told that in many cases the evacuation hospitals had been very short of medical men, while not many miles away there were a number of doctors who were not fully occupied, but they were not transferred to these evacuation hospitals because they were somewhat too rigidly attached to their existing organisations. If the right honourable gentleman would only multiply these evacuation hospitals and have a system of linking up which would enable him to mobilise the medical men to a greater extent than at present, far more satisfactory results would be obtained. These remarks applied more particularly to France. The honourable gentleman went on to say that large numbers of men had been wounded in the big action on the Gallipoli Peninsula on May 5th, 7th, and 8th. They had to be transported to Malta and Alexandria to get hospital treatment. They were put on ships' launches and then removed to trawlers and then put into a transport ship. In the case of three transports with 800 or 1000 patients there were only three surgeons and two orderlies to attend them. That was totally and absolutely inadequate. Many of the men were not able to get attention for five or even six days. He hoped that the right honourable gentleman would be able to say that many more medical men had now been sent out. There were scores of medical men perfectly willing to go out. He believed that it was the general opinion of men who had had many months of the work of caring for the wounded that whilst nobody wished to decry the work of this particular branch of the army and the War Office, there was a good deal which might easily be done.

Reply of Under Secretary for War.

Mr. TENNANT, Under Secretary for War, said: I am bound to say that my honourable friend has made, shall I say, criticisms upon the actual service of the Royal Army Medical Corps in the field overseas which took me somewhat by surprise. I have lived in the belief, encouraged and corroborated by many statements official and unofficial, that our service overseas in relation to the treatment of the wounded has been not only beyond compare with anything which has ever been done in the past, but is beyond all praise, and I am free to admit that that is my opinion still. But because that is so, it does not follow that some defects may not creep in at some time which could be, and should be, remedied. He spoke of evacuation hospitals. I am not sure whether he meant the stations where the wounded are taken first before their wounds are actually dressed or to the hospitals at Boulogne.

Mr. ROCH: I was dealing with those hospitals, whether evacuation hospitals or clearing hospitals, which are nearest to the line.

Mr. TENNANT: They are never called hospitals; they are called clearing stations. There are a few nurses at them, and the Royal Army Medical Corps is always available, or ought to be, unless the wounded should be unfortunately in such large numbers that it is impossible to attend to every one at once. I agree when that arises rapidity of treatment is of the first importance. That is common ground, and no one would for a moment differ on that subject. But my honourable friend appeals for more of these first-aid stations, and I shall be glad to represent that to the proper quarter, and if it should be found that more are desirable and capable of being erected either as tents or as buildings, I can promise him that no effort of mine shall remain unused to get that carried into effect. My honourable friend mentioned three particular classes of wounds which are particularly important and dangerous. It is quite true that it is very desirable that these should be treated at these stations if it were possible. I am only questioning the possibility of doing those things at these actual stations. They are not hospitals. They do not in most cases, though they may in some, have the necessary apparatus for operations—theatres and all the equipment thereof which are very considerable—and therefore I do not know whether it is possible, but I will engage to make representations to Sir Alfred Keogh, who has the excellence of the service more at heart than anyone, and who is responsible for the work of organising which I think the House appreciates, and I am sure if it is possible and desirable it will be carried out.

Mr. ROCH: Will my right honourable friend himself apply the tests at the London hospitals which I suggested? I am told there is a difficulty in increasing the number of hospitals, but I should like him to inquire as to these three classes of wounds to which I have referred.

Mr. TENNANT: I shall be very glad to undertake what my honourable friend asks.

The Shortage of Medical Men.

In regard to the shortage of medical men (Mr. Tennant proceeded) I do not think my honourable friend fully appreciated how very great is the difficulty. It is not so great at the present moment as the difficulty which looms in the future, and is likely to become greater as time goes on and as we have even more men in the field. In regard to the mobilisation of the Royal Army Medical Corps I hope very much that there is a mobile body of persons and that they are available to go from place to place as and where their services are required. I will not omit from my representations to the Director-General that aspect of the matter which my honourable friend has laid before the House.

The Wounded at the Dardanelles.

I shall say a word about the Dardanelles. It is true, as my honourable friend says, that during the battles early in May large numbers of wounded unfortunately had to be evacuated, and the machinery for doing this and for taking them in ships to hospitals in Malta and Alexandria was deficient. It must be remembered that in taking them to the ships they were under shell fire. It was impossible to evacuate them except under shell fire, and it was not unnatural that there should be a shortage of ships and hospitals at that time. I quite understand that there was a shortage. I greatly regret it, but I do not think that it is a thing that is not understandable. It is a thing we regret, but at the same time it is a thing that can be accounted for. What I would like the House and the country to understand is that whilst there was that shortage at that time, and while the wounded had to be embarked upon transports without any of the necessary appliances for the treatment of sick and wounded, and that therefore suffering must have ensued, that matter has now been put right.

Mr. ROCH: By hospital ships?

Mr. TENNANT: Yes; by hospital ships. Perhaps the honourable gentleman will be interested to know what has been said by the Director-General of the Medical Service in regard to this matter. He says: "At the outset, owing to the military situation, the wounded were taken direct from the battlefield and put on board ships and transferred to Egypt and Malta. In both places abundant accommodation was available." The honourable Member will see that that is in conflict with his statement. The Director-General then goes on to say: "The general officer commanding in chief in Egypt has written to say that he is highly satisfied with the arrangements made there by the Royal Army Medical Corps, and he considers they have done splendid work. The Australian and New Zealand Medical Services have not been second even to the Royal Army Medical Corps in this respect. On the Gallipoli Peninsula the Royal Army Medical Corps has been complimented on parade by at least one general officer commanding. The information which I have received regarding medical affairs in the Dardanelles, Egypt, and Malta is most flattering to the Royal Army Medical Corps and the medical service generally in those places. The present arrangements include provision of two hospital ships for Indian troops and 12 hospital ships for British troops, the latter being used to evacuate suitable cases direct to Egypt, Malta, and the United Kingdom. In addition, hospital accommodation is available for suitable cases and a convalescent hospital has been organised locally. Ample medical personnel, including consultants, is available." All this is new since the report received by my honourable friend, the facts of which he has stated here to-day in the interests of the sick and wounded. I hope the House and the country will realise that these matters are engaging our attention. There are, of course, practical difficulties, and a good deal of the difficulties as regards matériel and personnel is really very great.

THURSDAY, JUNE 24TH.

Treatment of Wounds.

Mr. LYNCH asked the Under Secretary for War whether his attention had been directed to a discussion in the French Academy of Medicine on the treatment of wounds, in regard to which sharp difference of opinion was shown as to the value of antiseptics in infected wounds; and what was the practice in the British medical service, both as to infected wounds and uninfected wounds.—Mr. TENNANT answered: The discussion in the French Academy of Medicine on the treatment of wounds has been considered by our consulting surgeons in France, and a report on the result of their experience in the treatment of both infected and non-infected wounds is being prepared for circulation to all military hospitals. The treatment of each wound must depend on many circumstances, but the practice in the British medical service is that known as the antiseptic method.

Mr. LYNCH asked the right honourable gentleman whether the mode of treating wounded which was known as the Watson-Cheyne treatment, by means of cresol paste, had given satisfactory results; and, if not, whether its use had been discontinued in the army service.—Mr. TENNANT replied: The results obtained by the use of cresol paste in the treatment of wounds have not been satisfactory, and its use has been discontinued.

Motor Operating Theatres.

Mr. LYNCH asked the Under Secretary for War whether, in order to deal with wounds at the front in cases where immediate operation was indicated, motor theatres were in use; if not, whether he could state any objections that had arisen as to their employment; and whether he would cause to be submitted to study, with a view to adoption, the best features of the Belgian system which had given excellent results.—Mr. TENNANT answered: Motor operating theatres are not in use. They are not considered necessary as facilities for carrying out operations are available as near the front as is deemed advisable. The Belgian practice in this matter has been duly considered.

Combating Poisonous Gases.

Sir JOHN JARDINE asked the Under Secretary for War whether, in order to deal with such things as poisonous gases, poisonous wells, and new explosives, any commissions in the army had been given to persons skilled in analysis and other chemical arts as distinguished from those who had medical qualifications; and whether Fellows of the Institute of Chemistry were eligible for such commissions.—Mr. TENNANT said in reply: Arrangements have been made to employ on such duties both as officers and non-commissioned officers a number of persons having these qualifications. Fellows of the Institute of Chemistry are eligible for commissions for this purpose.

Pay of the Royal Army Medical Corps.

Mr. HORNER asked the Financial Secretary to the War Office what was the total pay, with allowances, of a man in the Royal Army Medical Corps holding the temporary rank of lieutenant in the Regular Army and the pay, with allowances, of a man holding a lieutenant's rank in the Royal Army Medical Corps Special Reserve, and what were the reasons for the difference in pay.—Mr. FORSTER replied: The civil surgeon serving under a special contract with the rank of lieutenant receives 24*s.* a day, inclusive of all cash allowances. The Special Reserve officer of lieutenant's rank receives pay and allowances of 17*s.* at home and 20*s.* in the field. The latter is serving on an engagement made in advance at the pay of the regular officer as in all other branches of the Special Reserve. The former is engaged on an emergency contract.

Alleged Inaccurate Dispensing by Chemists.

Mr. O'GRADY asked the representative of the Insurance Commissioners how many cases of inaccurate dispensing of prescriptions had occurred within the last six months; whether the Commissioners were satisfied that any inaccuracies which had occurred arose from the fact that dispensing had been carried on by unqualified men and boys who had not been apprenticed to a registered chemist and druggist; whether in all such cases of inaccurate dispensing the registered chemist who was responsible in law would be struck off the panel of insurance dispensers; and whether in view of the danger arising from the fact of inaccurate dispensing, a committee of inquiry would be set up to go into the whole matter and report to this House with recommendations to remove the danger.—Mr. C. ROBERTS answered: The particulars asked for in the first part of the question are not available, but I have no reason to suspect the existence of any circumstances which call for such an inquiry as suggested. If, however, my honourable friend has any specific case in mind and will let me have particulars I shall be happy to make inquiries and let him know the result.

Insurance Committees and Drug Contracts.

Mr. WATT asked the representative of the Insurance Commissioners whether medical insurance committees could be sued for supplies of drugs which they had purchased, received, and passed, or whether these committees had the privilege of Government departments of not being amenable to the courts of the land; and, if the latter, would he introduce legislation altering the principle of a purchasing body being able to pay or not pay, as seemed to them convenient, for goods purchased.—Mr. C. ROBERTS replied: The circumstances under which insurance committees contract for the supply of drugs are not as stated in the question, but I may, however, refer my honourable friend to Section 30 of the National Insurance Act, 1911, which provides that every insurance committee shall be a body corporate and may sue and be sued.

War and Public Health.

In the course of the debate in Committee of Supply on the Local Government Board Vote,

Mr. W. LONG (President of the Local Government Board) said: The work which my department has been called upon to do during the year which is of a special character connected with the war refers chiefly to sanitary questions, the provision and maintenance of hospitals, and to another most important question, the provision of food-supplies both for

our army abroad and for the vast number of troops who are quartered here at home. Of the Local Government Board officers who have been assisting the local authorities and coöperating with the War Office in this important work there have been 12 medical inspectors constantly at work. They have paid no less than 750 visits to nearly 500 places where troops have been quartered, and the object of their visits has been, in the first place, to prevent undesirable billets being selected for troops; secondly, to secure that there should be satisfactory sanitary services for the troops, water-supply, sewerage, &c.; thirdly, to see that there is adequate hospital accommodation for infectious diseases and prompt action taken both by the local and military authorities; and lastly, to secure the prevention of conditions which might generally be dangerous to the health of the troops. In this work the Local Government Board, the local authorities, and the War Office have throughout worked cordially together, and as the result shows satisfactorily, and I do not hesitate to say that the thanks of the country are due to the officers of this great department for the invaluable services which have been rendered in a time of great need and have resulted in securing the very satisfactory results which are to be found at the present moment as regards the health of our troops. In expressing my thanks—and I am sure that the committee will allow me to express its thanks—to these distinguished officials, I desire to include all the local authorities, and especially the boards of guardians. The committee will be interested to know in connexion with the hospital accommodation for soldiers that my department has been instrumental in supplying no less than 30,000 beds. Anyone who has taken an interest in the provision of hospital accommodation for troops knows that people are very willing to provide accommodation and to render personal service so long as it is to be given to troops, preferably to men who come back wounded from the front; but if these are not sent to them, then to soldiers belonging to units which are serving with the colours here. Many of the boards of guardians have done even more than this, and in order that the accommodation should be available and that certain buildings should be placed at the accommodation of the War Office they have done what was not so agreeable to them and does not bring them so much apparent credit—they have pooled their resources and have taken in the inmates of the establishments of adjoining unions. In this way alone they have made it possible that buildings of this kind should be placed at the disposal of the War Office and that very large accommodation should be provided for the soldiers. In paying this tribute, which I gladly do, to the work of the local authorities, county councils, urban and rural district councils, and boards of guardians, I hope that they will not think that the end of their service has come. Under the shadow of a great war it is inevitable that much more will have to be asked both of local authorities and of individuals. I have no doubt that it will be my duty to appeal to local authorities for further help, for further sacrifice of time, and for further work in connexion with what the Government may think it necessary to do in connexion with the war, and I am confident that ready and generous as has been their response hitherto so it will be in the future, and that they will do everything they can by placing their resources at our disposal and by undertaking fresh work if they believe that we are asking them to do it in the real interests of our country and in order that this great war may be pursued to its only possible termination.

The Army and Sanitary Problems.

I have said (continued Mr. LONG) that the condition of the health of the country is to-day unquestionably satisfactory and that is in no small measure due to the work of the local authorities and the officers of my department. It really is an even more remarkable fact than may at first sight appear to honourable Members. Let me ask the Committee to remember what has been going on. You have had the sudden creation of a new army. You have had enormous aggregations of soldiers camped in places where there was no local provision for them, no water-supply, no drainage, no roads. Everything had to be provided, and it is really almost a marvel that you should have had all those conditions, so utterly different from the conditions normally prevailing in the country, and that you should be able to say almost at the end of eleven months that not only has there been no evidence of unsatisfactory results either as regards the health of the soldiers or of the civil community, but that the general condition in regard to health is as satisfactory as it possibly could be. I should like in regard to this service to read a letter which was addressed to my department before I came to it from the War Office. After stating that it has had under consideration the assistance which local health authorities under the guidance of the Local Government Board have rendered since the outbreak of war to troops stationed in their administrative areas, it states that—

"This assistance in the unexampled circumstances of the last eight months has been invaluable in safeguarding the health of the Forces and in preventing the spread of infectious disease to an extent which would otherwise have been impracticable."

The War Office authorities inform us that they are anxious to convey to us and to the local authorities the warm thanks of the Army Council for the work that has been done. I have already told the Committee how much has been done in regard to hospital accommodation, and I have only this to add. While I am able to congratulate the Committee and the country on the present satisfactory condition of things, I would take this opportunity to remind honourable members that with the arrival of the hot weather and possibly with the return of large numbers of wounded men—and some of those returning men may be suffering not from wounds but from disease—there may be great risks and new difficulties to be safeguarded against, and it behoves our local authorities, and may I also say it behoves all those who live either in town or country and who take an interest in the local welfare of the people, to see that unremitting attention be devoted to important local work so that no effort is spared to see that the health of the community is guarded against any possible invasion and is secured at the high level at which, I am happy to say, it stands at the present moment.

Inspection of Food for the Troops.

We have also had the strongest expression of thanks from the War Office for the coöperation which our Medical Department food inspectors have been able to give in regard to the food supplied to the troops, and I think that the Committee will remember that on previous occasions when large quantities of food have been supplied for troops there have often been very considerable difficulties in regard to the character and the quality of that food and also in regard to its suitability. We, of course, lay no claim to any share of the vast amount of credit which belongs to the Quartermaster-General for the supply and distribution of food to our troops, whether at home or abroad, but we are entitled to say that the action of our experts has been of the greatest value to the War Office and it has resulted, as far as we know, in the food with which the troops are supplied proving to be not only wholesome and satisfactory, but of a character which has been most suitable for troops engaged either on active service abroad or training here at home. Proof of it is to be found in the fact apparent to the most casual observer and in evidence received from abroad, that as far as the physical condition of our troops goes it is as good as it possibly can be. The remark has been made, and it must have occurred to the honourable gentlemen when travelling about the country, that our troops have shown the most wonderful results from training and living in camp, notwithstanding the hard work and the extraordinarily heavy rains which they had to live under in the months of August and September last. Although they were living under such conditions which could not be expected but to be most unhealthy, the results have been most extraordinary. We can see for ourselves how these men have improved, and that in itself is evidence that the food with which they have been supplied has been the most wholesome and the most suitable that could have been provided.

General Health of the Country.

As to the general health of the country (said the right honourable gentleman after he had alluded to certain administrative questions in which the Local Government Board was concerned), I have said that in the districts where we have had large collections of soldiers it has been satisfactory. That may be said of the country generally. There has been an outbreak of measles among the grown-up people which largely affected the soldiers. We believe that the reason for that is probably to be found in the constant movement of soldiers which takes place as part of their military business, and has no doubt taken infection from place to place. That, however, is being carefully watched. It will probably be necessary to make some fresh departure in regard to dealing with the disease of measles, which has been looked upon as an almost harmless complaint mainly affecting children, but which has turned out to have a serious result in regard to some men it has affected. It will be necessary to strengthen our position in regard to that particular disease, but otherwise the position is one upon which we may congratulate ourselves. There were 2500 cases of cerebro-spinal disease, commonly called spotted fever, but they are rapidly decreasing. There was an apprehension in the country shared by some honourable gentlemen in this House that there had been a sudden increase in infant mortality in the earliest days of the infant's life, but that increase was traceable at once to particular diseases—measles and whooping-cough—which account for it all. There is no justification whatever for the suggestion that this increase has been due to any privations from which the people have suffered. I am sure my right honourable friend (Mr. Herbert Samuel) will confirm me in saying this that the Local Government Board has been most persistent in watching the course of events in the country and has continued to feel the pulse of the people in regard to poverty,

suffering, and disease, and I believe we have come through those ten months of war stronger and better than we could ever have hoped to do.

The Maudsley Hospital.

The House considered on report the London County Council (General Powers) Bill.

Clause 6 (Visiting Committee of the Council may receive boarders at Maudsley Hospital) was to the following effect: "(1) The Visiting Committee of the Council may, if they think fit, receive and lodge as a boarder and maintain and treat in the asylum known as the Maudsley Hospital on such terms and conditions as to payment and otherwise as they may determine any person suffering from incipient insanity or mental infirmity who is desirous of voluntarily submitting himself to treatment therefor. (2) The Council may, if they think fit, defray the whole or any part of the expenses of the maintenance and treatment in the said asylum of any such person as a voluntary boarder. (3) Rules made under Subsection (1) of Section 338 of the Lunacy Act, 1890, may prescribe the book entries, reports, notices, and other documents to be kept and made in respect of boarders in the said asylum."

Mr. HARRIS moved as an amendment that in Subsection (1) the words "asylum known as the" should be omitted, so that it should read "maintain and treat at the Maudsley Hospital," &c.

Mr. KING remarked that some years ago Dr. Maudsley gave £30,000 for the establishment of a mental hospital, and his idea was that incipient insanity might be treated in the hospital with great prospects of cure. It ought to be clearly understood that Dr. Maudsley's idea was that the hospital should not be an asylum, but he (Mr. King) feared that it would now be an asylum under the Lunacy Acts.

Mr. WHITLEY (Chairman of Committees) said that it was desirable that the name "asylum" should not be attached to this institution, which was going to be used for the treatment of incipient mental cases, the very thing for which he understood medical men were most anxious. Dr. Maudsley was perfectly agreeable to the proposals of the Bill.

Mr. HARRIS mentioned that although the institution technically would be an asylum, it would not be run on the lines of a county asylum. In the first place, there would be a very small number of inmates; and, in the second place, it would not have what Dr. Maudsley called, he thought, the atmosphere of lunacy which it was almost impossible to get rid of in a large asylum. There was going to be an out-patients' department. He hoped that permission would be given to have voluntary boarders in the institution.

The amendment was agreed to. Other amendments were also agreed to substituting the word "hospital" for the words "asylum" in subsections (2) and (3).

The following new subsection was added to the clause:—

"(4) A voluntary boarder in the said hospital shall be at liberty to leave the said hospital on giving 24 hours' notice of his intention to do so."

The Bill was afterwards read a third time.

MONDAY, JUNE 28TH.

Sanitary Measures in the Trenches.

Sir COURTENAY WARNER asked the Under Secretary for War what steps had been taken to provide quicklime for the trenches in France and Belgium; and whether he was aware that the German trenches now occupied by our troops were in a most unsanitary condition, and that there was danger of disease unless large quantities of quicklime were available.—Mr. TENNANT said in reply: Lime is obtainable in large quantities in the area at present occupied by the British troops, and I am informed that it is being freely used in our trenches.

TUESDAY, JUNE 29TH.

Small-pox at Oldham.

Mr. HODGE asked the President of the Local Government Board whether he was aware that the first case with which the recent outbreak of small-pox was started at Oldham on Feb. 25th, 1915, was that of a vaccinated man; that the whole of the attacks were equally mild, the vaccinated and unvaccinated patients all suffering from the discrete type of the disease; that none of the cases terminated fatally, but that the patients were discharged from hospital after comparatively short periods of detention; whether the cause of the outbreak had been traced; and, if the source of the trouble was some insanitary condition of water-supply, drainage, or otherwise, whether the same had been put right.—Mr. LONG wrote in reply: Though the first recognised case of small-pox in the recent outbreak at Oldham was admitted to the hospital on Feb. 25th, it would appear that the first case of the disease, from which all the others can be traced, was in an unvaccinated girl, whose illness was not originally recognised as small-pox. All the cases had mild attacks of the discrete type and none were fatal, and most of them were in the hospital for comparatively short periods. The cause of the outbreak has not been definitely traced, but there is nothing to show that it was connected with any insanitary condition.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BEESLEY, CLARENCE, L.R.C.P. & S. Edin., D.P.H. Camb., has been appointed Acting Deputy Medical Officer of Health to the Exmouth Urban District Council.

LAMB, J. M. A., L.M.S., L.S.A. Lond., has been appointed Medical Officer to No. 4 District of the Poole Union.

ROBERTS, C. HUBERT, M.D. Lond., F.R.C.S. Eng., F.R.C.P. Lond., has been appointed Member of Visiting Staff, War Hospital, Epsom.

ROBERTS, H. LLOYD, L.R.C.P. Irel., D.P.H., has been appointed Assistant Medical Officer of Health and School Medical Officer to the Exeter Corporation.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

BRISTOL GENERAL HOSPITAL.—House Physician for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Assistant to Ear, Throat, and Nose Department.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

CHELTENHAM EDUCATION COMMITTEE.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Tuberculosis Officer. Salary at rate of £500 per annum, with lunch and dinner.

CROYDON MENTAL HOSPITAL, Upper Warlingham, Surrey.—Second Assistant Medical Officer. Salary £250 per annum, with board, lodging, and laundry.

DURHAM COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board and lodging.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary as agreed, with board, residence, and laundry.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Assistant Casualty Medical Officer and House Surgeon, unmarried, for six months. Salary £30 each, with board, residence, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Second Resident Medical Officer. Salary £200 per annum, with board, residence, and laundry.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Female Part-time Demonstrator in Anatomy.

MACCLESFIELD GENERAL INFIRMARY.—House Surgeon. Salary £150 per annum, with board and residence.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST, Bowdon, Cheshire.—Resident Medical Officer for In-patient Department. Salary £250 per annum, with board, apartments, washing, &c.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MARGATE, ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £150 per annum, with board, residence, and laundry. Also Female Surgeon. Salary at rate of £250 per annum.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Senior Demonstrator of Anatomy. Salary £100 per annum. Also Demonstrator in Physiological Department.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

NEWCASTLE-UPON-TYNE, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Demonstrator of Anatomy. Salary £250 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary at rate of £300 per annum, with board, residence, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon and House Physician. Salary £250 and £240 per annum respectively, each with board, residence, and washing.

PUTNEY HOSPITAL (CHESTER BEQUEST), Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with residence, board, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

ROCHESTER, KENT, ST. BARTHOLOMEW'S HOSPITAL.—Resident Assistant House Surgeon, unmarried, for six months. Salary at rate of £110 per annum.

ROTHERHAM HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £125 per annum, with board, lodging, and washing.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £100 per annum respectively, with apartments, board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHEFFIELD, WHARNCLIFFE WAR HOSPITAL, Middlewood-road.—Resident Medical Officers.

SUNDERLAND ROYAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Salary £200 per annum, with board, apartments, and washing.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Isle of Wight.—Assistant Resident Medical Officer. Also Locum Tenens for a month. Salary as arranged, with board, lodging, &c.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON COUNTY BOROUGH.—Temporary Assistant Medical Officer of Health. Salary £300 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £200 per annum, with board, apartments, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Resident Medical Officer. Salary £160 per annum. Also House Physicians and House Surgeons. Salary £120 and £100 per annum respectively, with board, residence, and washing.

WEST RIDING ASYLUM, Menston, near Leeds.—Temporary Assistant Medical Officer.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £150 per annum, with board, apartments, and washing.

WINDSOR, KING EDWARD VII. HOSPITAL.—House Surgeon. Salary £100 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Honley and Normanton, in the West Riding of Yorkshire; and at Romford, in the county of Essex.

Births, Marriages, and Deaths.

BIRTHS.

ANDERSON.—On June 25th, at Eversleigh-gardens, Loughton, the wife of Captain A. W. Anderson, R.A.M.C., of a daughter.

BIRT.—On June 24th, the wife of Guy C. Birt, M.R.C.S., of Lowood, Merstham, of a son.

COLLINS.—On June 21st, at The White House, Yoxford, Suffolk, the wife of Dr. Eric Abdy Collins, of a daughter.

COOMBS.—On June 23rd, at "Redburn," Rothsay-place, Bedford, the wife of H. Martin McC. Coombs, M.B., R.A.M.C.(T.), Eastern Mounted Brigade Field Ambulance, of a daughter.

FITZMAURICE-KELLY.—On June 25th, at a Nursing Home, 2, Nottingham-place, W., to Lieutenant M. Fitzmaurice-Kelly, R.A.M.C., and Mrs. Fitzmaurice-Kelly, a daughter.

STEINBACH.—On June 10th, at Newton House, Knaresborough, Harrogate, the wife of Horace Steinbach, M.R.C.S., L.R.C.P. Lond. (née Goodison, M.B., B.S. Lond.), of a daughter.

TYRRELL GRAY.—On Friday, June 25th, at 3, York-place, Portman-square (Nursing Home), the wife of H. Tyrrell Gray, F.R.C.S., of a daughter.

MARRIAGES.

ANDERSON—BECKWITH.—On June 26th, at St. Matthias Church, Richmond Hill, Gilbert Norman Anderson, Lieutenant, R.A.M.C.(T.), to Stella Christine, elder daughter of Mr. George E. H. Beckwith, of Copthorne, Denbigh-gardens, Richmond, Surrey.

BAYON—TOPHAM.—On June 23rd, at the Vice-Consulate, Cannes, and afterwards at Holy Trinity, Nice, H. P. Bayon, M.D., of Robben Island, South Africa, to Adele Nelia (Bobs), eldest daughter of Mr. and Mrs. Edwin H. Topham, of Villa Haute Rive, Cannes.

DALBY—MIDDLETON.—On June 17th, at St. Pancras Church, Lieutenant Edwin Ballard Dalby, R.N.R., to Marjorie Eva Middleton, M.B., B.S. Lond., D.P.H. Lond.

JACKSON—HARPER.—On June 24th, at Penarth. Robert Ashton Jackson, M.B., to Frances Mary, daughter of Alfred Harper, of Penarth.

MATHER—YOUNG.—On June 19th, at St. James's Church, Birkdale, Lieutenant J. H. Mather, M.B., R.A.M.C., to Eva Mary, youngest daughter of the late Mr. William Young and Mrs. Young, of Manchester and Southport.

DEATHS.

BODKIN.—On June 23rd, at Tiptree, Essex, Arthur Malcolm Bodkin, M.B., B.C. Cantab., aged 30 years.

MCCULLOCH.—On June 25th, at Alexandra Hospital, Cosham, Hants, Lieutenant-Colonel Thomas McCulloch, M.B., R.A.M.C.

MARSH.—On June 24th, at The Lodge, Downing College, Cambridge, Howard Marsh, F.R.C.S., M.A., M.C., Sc.D., Master of Downing, University Professor of Surgery, and late Fellow of King's College, aged 75 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH IN THE PACIFIC ISLANDS.

THERE has just been presented to both Houses of Parliament, by command of His Majesty, the report for the year 1913–14 of Mr. E. C. Eliot, resident British Commissioner for those of the Pacific islands which are comprised in what is known as the Gilbert and Ellice Islands Protectorate. The Gilbert group, situated between 4° N. and 3° S. latitude and 172° and 177° W. longitude, consists of 16 islands, with several small islands or islets depending upon them; and the Ellice group, between 5° S. and 10½° S. latitude and 176° E. and 179·58° longitude, consists of nine islands. Ocean Island (or Paanopia), in latitude 0° 52′ S. and longitude 169° 35′ E., was proclaimed British in 1900, and the Union or Tokelau group—Fakaafo, Nukunono, and Atafu—were included in the Protectorate in 1909, with a port of entry at Atafu. At the census of 1911 the total population comprised 30,523 natives, 301 Asiatics, and 297 Europeans. Mr. Eliot's report, which is of more than usual interest, points out that "the 28 inhabited islands are scattered over a tract of ocean extending 1100 miles from east to west and 800 miles from north to south, giving an area of close on 1,000,000 square miles."

In 1913–14 there were 891 births and 774 deaths in the Gilbert Islands and 161 births and 155 deaths in the Ellice Islands. The population, compared with the last census, showed a slight increase. This increase has taken place in the northern and southern islands of the Gilbert group and also in the Ellice group, but in the islands of the Central Gilberts the death-rate continues to be in excess of the birth-rate. It is possible that tuberculous disease affecting the genitals is mainly responsible for this, as in the central islands of the Gilbert group this disease is most prevalent. The matter is receiving the attention of the medical authorities.

The headquarters of the Protectorate are at Ocean Island, and district administrative stations are distributed throughout the Northern, Central, and Southern Gilberts, the Ellice Islands, and the Union group. The headquarters of the medical staff are at Tarawa, with a central hospital and a training school for native medical students. Medical headquarters of the Ellice and Union groups are at Funafuti, where a new hospital has been erected. Provision has further been made for a third medical station on the large islands of Tabiteuea, which will become a centre for the Southern Gilberts. At Ocean Island the duties of health officers are performed by one of the medical officers of the Pacific Phosphate Co., with Government remuneration. Native hospitals have been erected on Ocean Island and every other inhabited island of the Protectorate. These are in charge of dressers trained at the Central Hospital. They are inspected by the European medical officers of the district, and all serious cases are transferred to the Central Hospital at Tarawa or to the Funafuti Hospital.

The native public health of the Protectorate is indifferent, and it is in this direction that the expenditure of public funds is most necessary. Tuberculous disease is common throughout the Protectorate and takes a heavy toll of the native population. Elephantiasis has been introduced into the Ellice Islands from the Samoan group, and is now common in all those islands. In the Gilberts but few cases are known, and it may be possible to check, if not to stem, the northward course of the disease. Syphilis is prevalent throughout all the islands, and accounts to some extent for the heavy death-roll in the past. It is probably also another factor in the sterility of the races. Salvarsan and neosalvarsan are now being used in these cases, as well as for the disease commonly known as yaws; this should prove of inestimable benefit to the community. Some 35 known cases of leprosy exist in the Gilbert Islands, and each island has an isolated leper asylum and attendant. There is only one known case of this malady in the Ellice group. The erection of a central leper asylum is under consideration.

In these small islands sanitation is a comparatively easy matter, and the natives are cleanly in habits. The climate is remarkably good considering the limits of latitude within which the Protectorate lies. Though many of the islands are within a few miles of the equator, cool breezes prevail and the heat is seldom intense. Malaria is unknown, but the stegomyia mosquito is common throughout the islands, and, with the single exception of Ocean Island, those pests form the most serious drawback to the comfort of life. When the endemic diseases already referred to have been taken in hand by the improved and extended medical service, the islands of this Protectorate should

compare favourably with any tropical possessions of the Crown. The common house-fly is at times very trying, and probably takes a large share in the dissemination of dysentery, which disease is almost endemic in some of the islands.

On the coming of civilisation in the persons of the first beachcombers and traders the native fell victim to the ancient peril that besets a folk at once eager and uneducated for Western luxuries. Intemperance threatened the race. But the Government, thanks to the judicious and willing aid of the native island officials, more farseeing than their fellows, has, by simple yet effective temperance regulations, been able to check the flood of excess which was leading to extinction. No Western intoxicant now reaches the native. The fermenting of cocoanut toddy is forbidden under penalty, but the nutritive value of fresh toddy for young children prevents a complete ban upon its collection. What drunkenness there is—and it is little—is caused by the secret consumption of fermented toddy; what violent crimes there are—and they are very few—are as a rule the outcome of clandestine drunkenness. The average native is sober, kindly, and peace-loving. The marriage laws are well devised and well enforced. Couples present themselves to the Bowi (native Government in Council), who consider their qualifications and appoint a day. Marriage can only take place with their consent, the ceremony being performed by the Bowi and afterwards in a mission church if the couple so wills. It is impossible to presuppose a high order of continence in a folk of this nature and at this stage of development, but the stringencies of native-made law and the precepts of Christianity are strong weapons to enforce chastity, and marriage is well safeguarded. Although the reasonable influences of civilisation upon the native are on the whole excellent, they have the effect of slowly discouraging old native customs. In many cases this is undeniably good, since the old customs were often the enemies of decency, sanitation, and all that contributed to public well-being. But the effect has been bad upon native dress, and through that channel upon native stamina. The old method of lubricating the body (bare save for a "riri" or kilt of finely worked leaves) with coconut oil was the best possible protection from chill in this region of sudden rains. The cotton smock for women and the cotton trousers and shirt for men, which in the mind of the people seem now so indispensable to professed Christianity, seem to render their wearers more susceptible to chills. The result is colds and pneumonia. The Government is doing what it can by enforcing the use in all gaols of oils and the "riri" and by encouraging native customs at all public dances.

Mr. Eliot says in conclusion: "There is promise in the Protectorate both for governed and government. A more efficient medical service, ensuring an advance in public health; improved methods of education and agriculture; better markets for island produce; better value for money—these are hopes which present promise justifies. The sound intelligence and the cheerful coöperation of native people and native governments with British officials will ensure fulfilment."

CHILD WELFARE.—INSECT-BORNE DISEASES.

THE annual meeting of the council of the Association of Infant Consultations and Schools for Mothers will be held at the Passmore Edwards Settlement, Tavistock-place, W.C., to-day (Friday), July 2nd, at 3.30 P.M., when discussions will take place on the Coördination of Municipal and Voluntary Effort in Infant Welfare Work, and on Infant Welfare and Maternity Centres in Rural Districts. The last-mentioned discussion will be opened by Dr. Elizabeth M. Sloan Chesser and others. In connexion with this association national mothercraft competitions will take place at Cosway-street L.C.C. schools, Edgware-road, W., on July 3rd, from 2 to 5 P.M.—Under the auspices of the Women's Imperial Health Association, a Mothercraft and Child Welfare Exhibition will be held at the Passmore Edwards Institute from July 3rd to 10th. Admission is free and there will be no trade exhibits, everything having been arranged with the idea of helping mothers, and those who are engaged in instructing them or engaged in personal work in eugenics and allied spheres. The sections comprise artificial feeding, arranged by the chairman of the Association of Infant Consultations and Schools for Mothers; baby care; model clothes; model day nurseries; a dental exhibit, arranged by Mr. G. Thomson, L.D.S., and Dr. J. Sim Wallace; housewifery and cookery; and a literature section. On Wednesday, July 7th, at 4.30 P.M., Dr. Louis W. Sambon will deliver a lecture on the Protection of Children against Insect-Borne Diseases.—The National League for Physical Education and Improvement is inaugurating a national campaign to prevent the spread of epidemics by insects in war-time. A meeting will be held at the Mansion House on Monday, July 5th, at 5 P.M., when Sir Frederick Treves will preside, and Bishop Boyd Carpenter, Professor Lefroy, and Dr. Sambon will be the chief speakers. Sir Thomas Barlow, Sir Lauder Brunton, Sir James Crichton-Browne, Sir Rickman J. Godlee, Sir Ronald Ross, and others have given their support to the movement. Free admission tickets may be obtained from the Secretary of the League at 4, Tavistock-square, W.C.

A NOVEL DEMAND.

To the Editor of THE LANCET.

SIR,—I was recently interviewed by a solicitor's clerk *re* a workman suffering from lead poisoning, who was duly notified under the Factory Act. I was served with a subpœna and £1 1s. was paid at the same time. In a later letter it states "for attendance at court." I am now informed as conduct money. Nothing was said at the time respecting it. I promised to attend. Shortly after I received a letter from a firm of solicitors stating that the case was settled out of court and asking me to return the £1 1*s*.

I have written refusing to return the fee on the grounds that I have never before been asked to return the fee, under the circumstances, and also that I accepted the fee for the interview. The solicitors state they never have had an objection of this kind before, that the fee was for the subpœna, and that they are willing to pay a reasonable fee for the interview, which in their opinion is very unusual.

Is not the subpœna a contract, and seeing I am punishable by fine and imprisonment if I do not attend, am I not justified in retaining the fee? I have frequently been paid a fee for such an interview, and in all cases not less than £1 1s. I should, however, like to know whether I am not also legally entitled to retain the fee, under any circumstances, seeing that I may have been considerably inconvenienced, and, if not, why was the money paid in advance? I am, Sir, yours faithfully,

June 19th, 1915. COMMUNE BONUM.

*** We have never heard of a fee being returned in the circumstances described, or of its return being asked for. We recommend our correspondent to maintain his attitude of refusal. We comment elsewhere upon the circumstances.—ED. L.

ALEXANDRA DAY IN EXETER.

"Alexandra Day" was recently observed in Exeter, and as a result of the sale of roses the sum of £275 has been raised for the Royal Devon and Exeter Hospital.

"GERMAN MEASLES."

THE lay newspapers during the last few weeks have reported that several patients who are suffering from "German measles" have resented being labelled with a disease bearing a name with such suggestive associations at the present time. The synonyms for "rubella," authorised by the Royal College of Physicians of London in the "Nomenclature of Diseases," were "rötheln," "German measles," and "epidemic roseola." Dr. Clement Dukes, of Rugby, maintained in our columns that the term "rubella" included two separate infections, etiologically and pathologically distinct, though hitherto confused, and he maintained that the discussion had not received the importance it deserved. He provisionally named it "the fourth disease" by reason of its admitted resemblance to scarlet fever, measles, and rötheln. There might here be a way of escape for some at least of those labelled "German measles" if it could be proved that they were really sufferers from a "fourth disease." The "fourth disease," or "Duke's disease," has got into one medical dictionary (Dorland) as "an alleged exanthematous contagious disease resembling rubella, scarlatina, and measles. It is marked by lamellar desquamation of the skin." As we know that the "German Ocean" of our school days has become the "North Sea," so perhaps the "German" measles might become the "Northern" measles—a definition which would be applicable as the disease appears to flourish chiefly in the northern temperate climates, i.e., Germany, Great Britain, and the Northern States of America.

ENGLISH AND GERMAN MEDICAL MEN.

THE rapid growth of German business during the last quarter of a century is exemplified in the increase of the number of medical men in Germany. For instance, in the year 1886 there were 16,292 medical men in Germany, according to the official directory, and 24 years later—viz., in the year 1910, there were 32,449 medical men. Thus it will be seen that the figures are almost exactly doubled. In Great Britain in the year 1886 there were 26,452 medical men, and in the year 1910 the number had risen to 35,281. In comparing the percentage of increase in this period it is obvious that while Germany increased its medical men by 100 per cent., Great Britain increased them by only 33·3 per cent. An estimate had been made by

German statisticians that by the year 1919–20 she would have a total of 44,227 medical man, but those figures were arrived at before the war and its influence will now no doubt have caused some diminution. The figures show that in the respect of medical men as in some other matters Germany made leaps of a remarkable nature in a quarter of a century.

AN ANTI-FLY SPRAY.

Messrs. Heppell and Co., pharmacists, of 164, Piccadilly, London, W., have submitted to us specimens of their anti-fly spray apparatus and fluid. Two sprays are made, the first being a hand appliance with rubber hand-bellows for local work, and the second a syringe with a large reservoir for spraying the air of rooms and public places. The fluid is a very agreeable mixture of aromatics and formaldehyde, and it is quite clear that flies do not like it and keep away from it. The spraying process has a pleasant effect upon the air, while the flies do not survive a shower very long. Its use besides is recommended in dustbins and on garbage generally, and it is pointed out that borax added in layers on such refuse will kill eggs and maggots before maturing.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1915, which was completed with the issue of June 26th, are given in this issue of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1915 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 30th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 24	29·904	N.E.	...	77	60	52	51	53	Raining
,, 25	29·860	E.	0·01	117	72	53	56	58	Cloudy
,, 26	29·890	W.	...	124	73	58	57	64	Cloudy
,, 27	29·830	S.	0·33	109	64	57	58	59	Raining
,, 28	29·756	S.W.	0·10	115	70	57	60	63	Cloudy
,, 29	29·736	S.W.	...	109	70	53	57	61	Cloudy
,, 30	29·754	S.W.	...	113	71	58	58	60	Overcast

The following magazines, journals, &c., have been received:—St. Mary's Hospital Gazette, Revue d'Hygiène et de Police Sanitaire, Canadian Medical Association Journal, Revue de Gynécologie et de Chirurgie Abdominale, Archives of Internal Medicine, Journal of State Medicine, Nordiskt Medicinskt Arkiv, Medical Journal of South Africa, Birmingham Medical Review, Archives of Pediatrics, Tropical Diseases Bulletin.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Lieutenant-Colonel W. Alpin, I.M.S., Brockenhurst; Messrs. Arnold and Sons, Lond.; Admiralty, Lond., Secretary of; Mr. Charles J. Anderson, Glasgow; A. P.; Aniodol, Lond.

B.—Messrs. C. Barker and Sons, Lond.; Mr. E. Bougault, Paris; Messrs. J. Bale, Sons, and Danielsson, Lond.; Dr. F. E. Batten, Lond.; Sir David Bruce, Lond.; Dr. H. Charlton Bastian, Chesham Bois; British Dental Association, Lond., Secretary of; Mr. R. W. Burkitt, Nairobi; Mr. E. J. Byrne, Shorncliffe; Messrs. A. Bishop, Lond.; Messrs. W. Browning and Co. Lond.; Dr. M. Bisset, Palwal, India; Borough Hospital, Birkenhead, Matron of; Mr. Stuart J. Burlay, Northdown; Mr. Richard G. Badger, Boston; Lieutenant J. S. Bookless, R.A.M.C., France; Messrs. Baillière, Tindall, and Cox, Lond.

C.—Messrs. J. and A. Churchill, Lond.; Messrs. Carter, Lond.; Carlisle Dispensary, Secretary of; *Chester Courant*, Manager of; Chelsea Guardians, Lond., Clerk to the; Dr. A. E. Carver, Torquay; Dr. Robert Cantemerle, Amsterdam; Chicago Scientific Publishing Co., Chicago, General Manager of; Chadwick Trust, Lond., Secretary of; Dr. B. J. Courtney, Yola, West Africa; Cheltenham Borough Education Committee, Secretary of; Major W. S. Crosthwait, R.A.M.C., Lond.; Coventry and Warwickshire Hospital, Secretary of.

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F.—Major E. G. Ffrench, R.A.M.C., Lond.; F. W., Shrewsbury; Mr. H. J. Fry, Twickenham; Lieutenant J. Foley, R.A.M.C., Leeds; Mrs. Farrant, Lond.; Dr. Anthony Feiling, Lond.; Messrs. Ferris and Co., Bristol; Messrs. H. Frowde and Hodder and Stoughton, Lond.; Factories, Chief Inspector of, Lond.; Messrs. Fisher, Stanhope and Co., Lond.

G.—Sir James F. Goodhart, Bart., Lond.; Messrs. Gordon and Gotch, Lond.; General Medical Council, Lond., Acting Registrar of; Mr. H. Ginn, Worcester.

H.—Messrs. Holt and Co., Lond.; Mr. W. F. Hills, Margate; Dr. L. Hirschfeld, Zürich; Mr. Paul B. Hoeber, New York; Mr. H. L. Harris, New York; Mr. T. D. Harries, Aberystwyth; Mr. P. Harper, Lond.

I.—Insurance Committee for the County of London, Clerk of the; International Correspondence School, Lond.

J.—Dr. A. J. Jex-Blake, Lond.; Mr. W. H. Jackson, Oxford; Jeyes Sanitary Compounds Co., Lond.

K.—Messrs. H. S. King and Co., Lond.; Professor H. Kenwood, Lond.; Professor Arthur Keith, Lond.; King George Hospital, Lond., Secretary of; Mr. Henry Kimpton, Lond.; Mr. M. F. Key, Lond.; Dr. Kilner, Calcutta; Mr. R. A. Kennedy, Lond.

L.—Dr. J. Lambie, Mansfield; Mrs. Luce, Derby; *Lincolnshire Chronicle*, Lincoln, Manager of; Mr. H. K. Lewis, Lond.; Messrs. Lee and Nightingale, Liverpool; Sir Henry Lunn, Pitlochry; London and Counties Medical Protection Society, Lond.; Local Government Board, Lond., Medical Officer to; Leeds Education Committee, Secretary of; Messrs. Lee and Martin, Birmingham; Dr. R. Bruce Low, Lond.; Dr. C. E. Lea, Manchester; Mr. J. B. Lamb, Lond.; Leicester Mental Hospital, West Humberstone, Visiting Committee of; Miss M. C. Lomas, Lond.

M.—Mr. D. Maguire, Metheringham; Lieutenant J. F. Morgan, I.M.S., France; Mundesley Sanatorium, Secretary of; Messrs. C. Mitchell and Co., Lond.; Dr. F. R. H. Meyrick, Brighton; Miss E. Mackinnon, Strathpeffer; Maltine Manufacturing Co., Lond.; Dr. Sanderson Mellor, Lond.; Mr. R. M. Morrison, Lond.; Dr. E. D. Macnamara, Lond.; Mr. J. Y. W. MacAlister, Lond.; Dr. J. E. R. McDonagh, Lond.; Mrs. Ernest May, Bartlow; Manchester Hospital for Consumption, Secretary of; Manchester Clerical, &c., Association; Macclesfield General Infirmary, Secretary of; Messrs. Mather and Crowther, Lond.

N.—Norwood Sanatorium, Beckenham, Secretary of; Surgeon-Major S. C. Noble, Kendal; National Union of Trained Nurses, Hon. Secretary of; National Association for the Feeble-Minded, Lond., Secretary of; National Medical Union, Lond., Assistant Secretary of; National League for Physical Education and Improvement, Lond., Secretary of.

O.—Sir Thomas Oliver, Newcastle-on-Tyne; Orpington; Messrs. Oliver and Boyd, Edinburgh; Dr. C. M. O'Brien, Dublin.

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